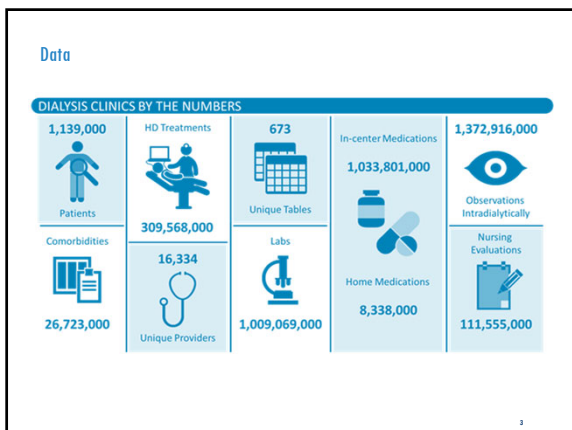
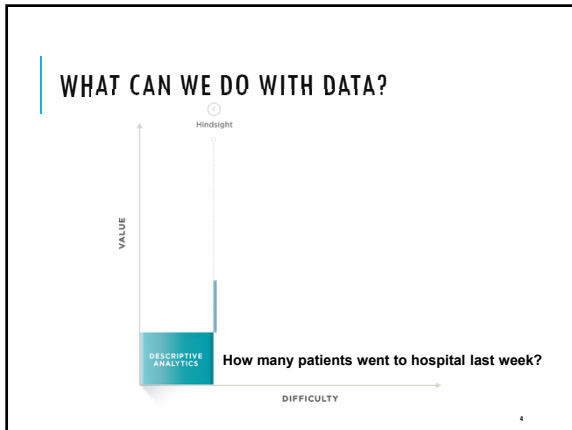


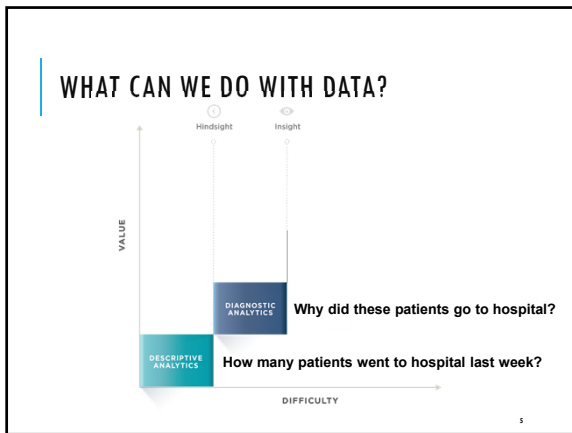


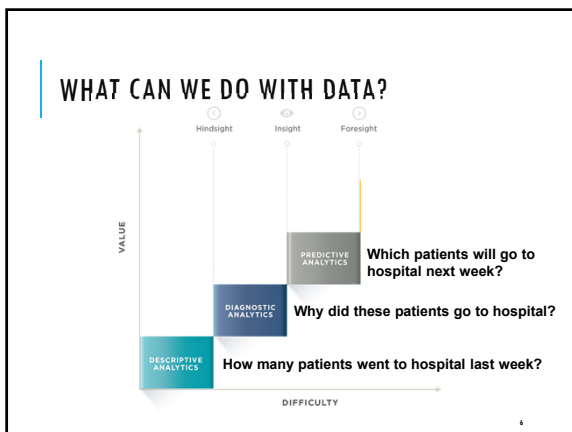
Speaker Disclosures

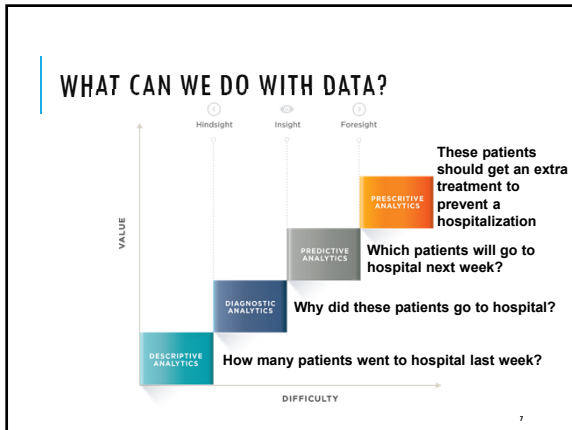
- Hao Han is employed by Fresenius Medical Care North America

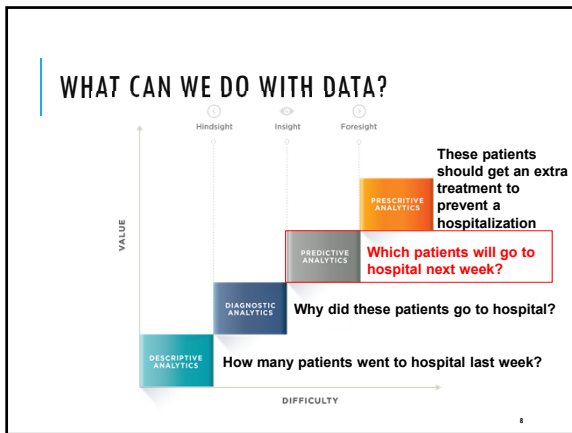


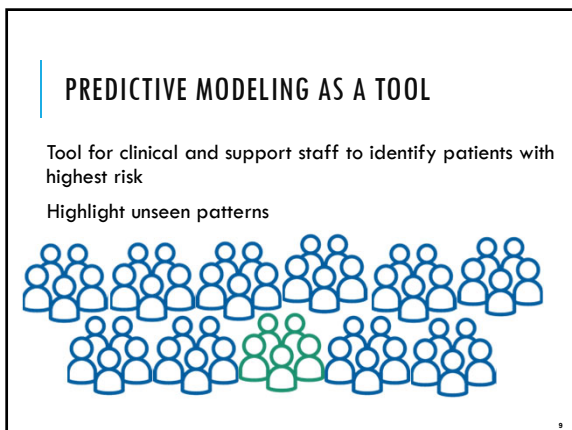










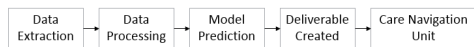


IMMINENT HOSPITALIZATION PREDICTIVE MODEL

Prediction of hospital admission risk in next few days

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IHPM - MODEL DEFINITION



Who? What? When? Timeframe?

Predict which active in-clinic patients are at high risk of hospital admission within 7 days

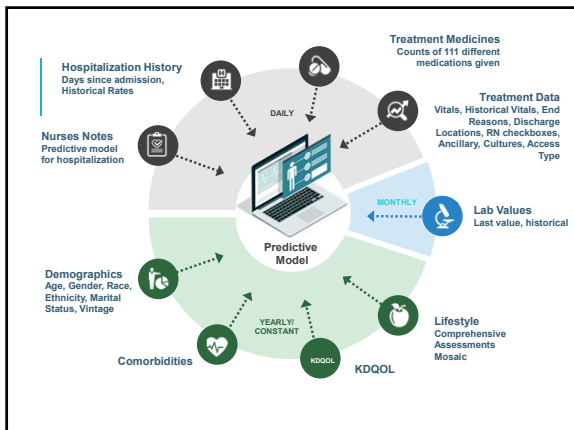
Predictions are executed the morning after a scheduled treatment

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IHPM - DELIVERABLE

Patient ID	Risk Score	Reason #1	Reason #2	Reason #3
PT1	99	No Show	HGB = 8	SBP = 52
PT2	82	SOB	COUGH	PULSE = 100
PT3	77	POS Culture	TEMP = 102	Pre weight = 54

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NURSING NOTES

- "Patient complains of chest pain"
- Abbreviations: "PT C/O CP"
- Word order: "NO SOB, PT C/O CP"
vs. "NO C/O SOB,CP"
- Spelling errors:
 - 'diarrhea','dihrrea','diarhea','dirrhea','diarrha','diarreha','diarrea',
 - 'diarrhea','diarrhe','d','diarrhea','diahea','diarreah'

Utilize techniques from deep learning to help with these issues

IHPM - RESULTS

Training data: Jan – May 2017 (~130K hosp)
 Test data: June 2017
 Number of variables used: >1500
 AUC = 0.78
 Sensitivity = 0.71
 Specificity = 0.75
 Precision = 0.06
 Prevalence = 0.03

Sensitivity = $\frac{\text{True Positives}}{\text{True Positives} + \text{False Negatives}}$
 Fraction of positives predicted correctly

Specificity = $\frac{\text{True Negatives}}{\text{True Negatives} + \text{False Positives}}$
 Fraction of negatives predicted correctly

Precision = $\frac{\text{True Positives}}{\text{True Positives} + \text{False Positives}}$
 Fraction of predicted positives that are actually positive

Prevalence = $\frac{\text{True Positives} + \text{True Negatives}}{\text{Total Population}}$
 Fraction of positives in population

DEPLOYMENT AND NURSE FEEDBACK

THIS IS SIMPLY OUTSTANDING. much better job identifying the higher risk members needing intervention

Your IHFM is going to help them tremendously **patients from the IHFM had more needs or recommendations** Discharged in more efficient to utilize

I hope I don't have to go back to the old way ☹️

I like not having to hunt for patients and just going down a list was easy

I really follow the steps & game plan **First impression is that it's great. Very nice to see things on one clear screen**

WIN! **LOVE THE REPORT! SO MUCH BETTER THAN THE REPORT** feel they are acting in real time and impacting members

IHFM tool allows me to target those **patients** have been recently discharged from hospital

"very useful in creating efficiency – instead of opening" each note "they are all laid out in front of me"

ten reasons combined may show a clinical context that is cause for concern

SUMMARY

Plenty data are available to improve patient care

Predictive modeling helps triggering worklist

Field RNs express great enthusiasm

Future analysis is needed to evaluate impact

QUESTIONS
