

The background features a series of overlapping, wavy lines in shades of red, orange, green, and blue, creating a sense of depth and movement. A bright, circular light source is positioned in the upper center, casting a soft glow across the scene.

# Vaccine utilization project

Model and insights




Business  
understanding

- Leader in the field of health care
- Likelihood to be vaccinated
- Person's background, views and behaviors



A large orange circle is positioned on the left side of the slide, partially cut off by the edge.

## Data understanding

- From the National 2009 H1N1 Flu Survey
  - Target: vaccinated against the H1N1 virus
  - Features: one's background, views and behaviors.
  - 27,000 observations (rows of data)
  - 21% of respondents received the H1N1 vaccine.
    - significant correlations: doctor recommendation, opinion of risk, and opinion of effectiveness.
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- A series of four yellow curved dashes are located in the bottom right corner of the slide.

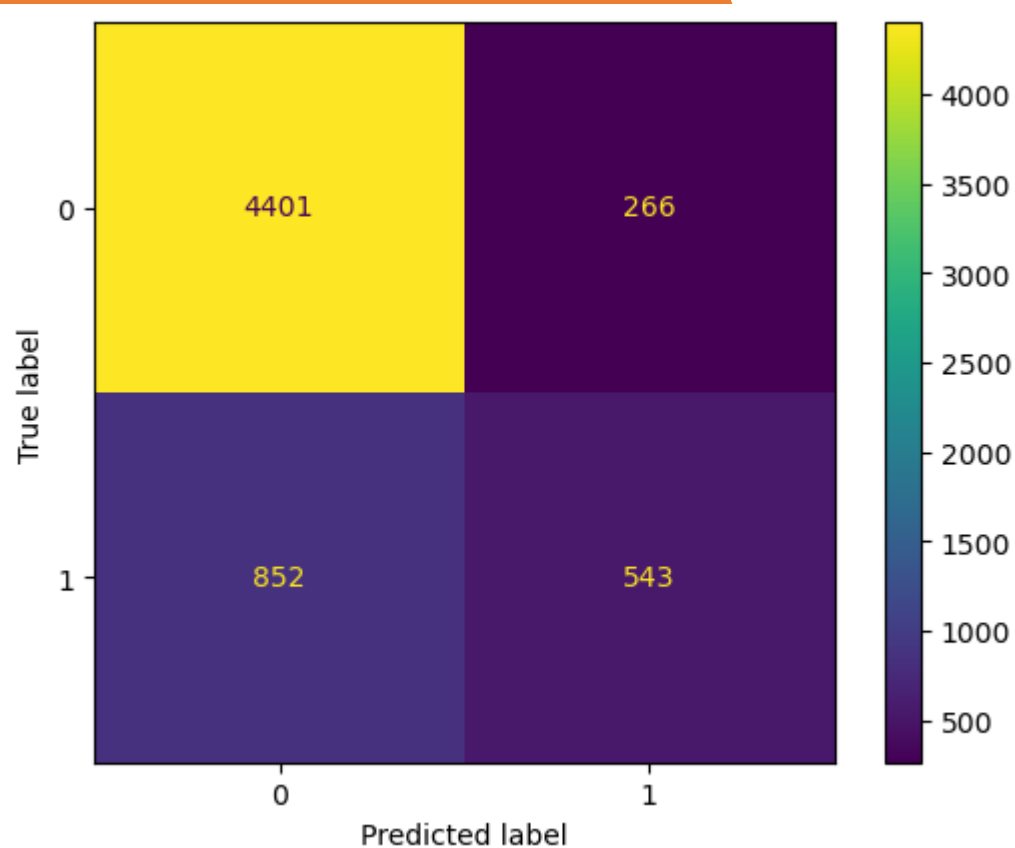
## Modeling Overview

- Baseline model
  - logistic regression
- Decision tree model
- Final tree model:
  - maximum depth of the tree is increased from 5 to 10
- Features: presence of a doctor recommendation, opinion of virus risk, and opinion of vaccine effectiveness

	Logistic Regression (baseline)	First tree model	Final tree model
Training accuracy	81.98%	82.00%	82.02%
Test accuracy	81.33%	81.05%	81.56%

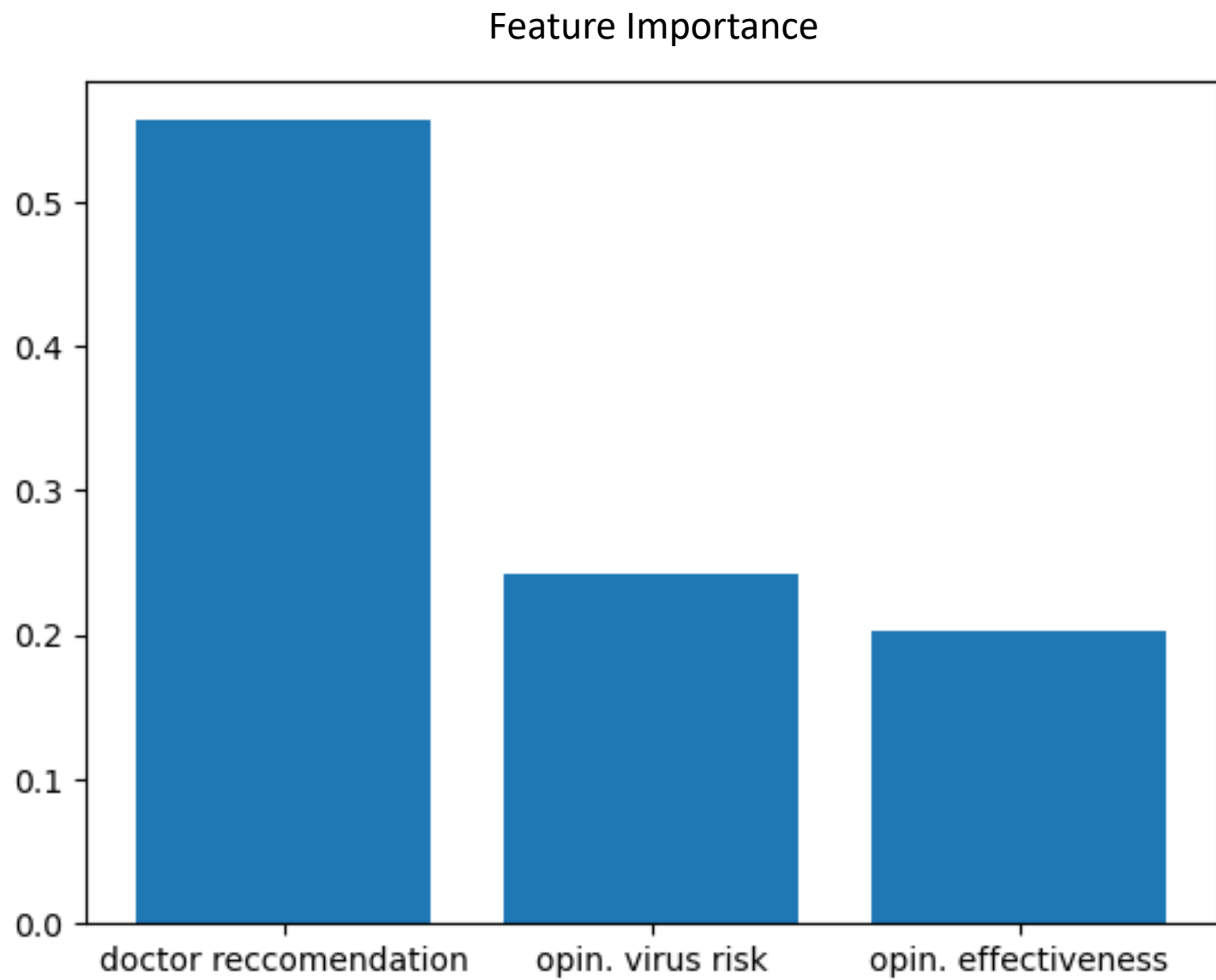
# Confusion matrix & False positive comparison

Final model



	Final model	first tree	Baseline
false positives	266	269	252
Total Observations	6,060	6,060	6,060
Actual negatives	4,740	4,740	4,740

Final model



# Recommendations

- Model implementation for similar outbreaks
- Provide more medical personnel resources
- **Limitations**
  - slight improvement over iterations
  - accuracy (82%)

Thank you/Questions?

