



**3 Sweaters
Consulting**

Boosting Vaccination Rates

Making Healthier Communities



NATIONAL INSTITUTES OF HEALTH | OFFICE OF COMMUNICATIONS AND PUBLIC LIAISON (OCPL)
OFFICE OF LEGISLATIVE POLICY AND ANALYSIS (OLPA)

We Will Propose...

- 1.) Consistency in physician promotion
- 2.) Emphasis on risk of illness and effectiveness of vaccines
- 3.) Targeting specific demographics



Agenda



Business Problem

Data & Methods

Results

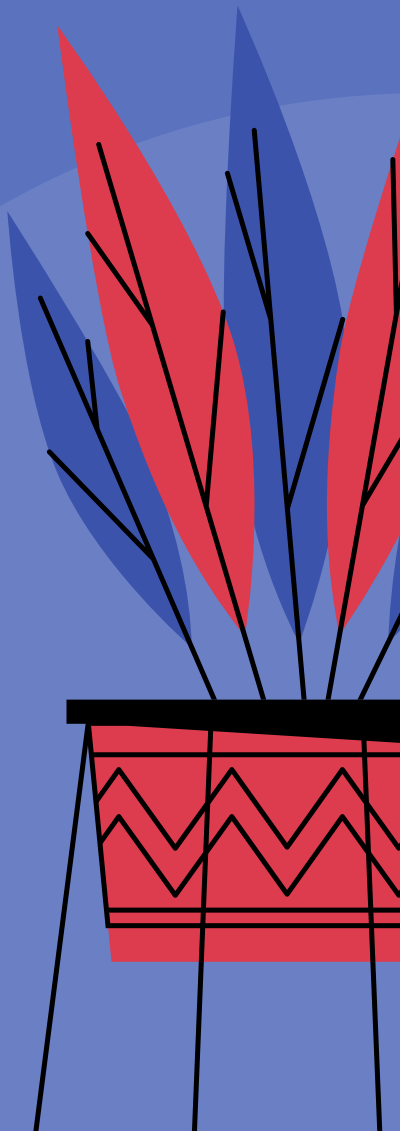


Recommendations



Business Problem

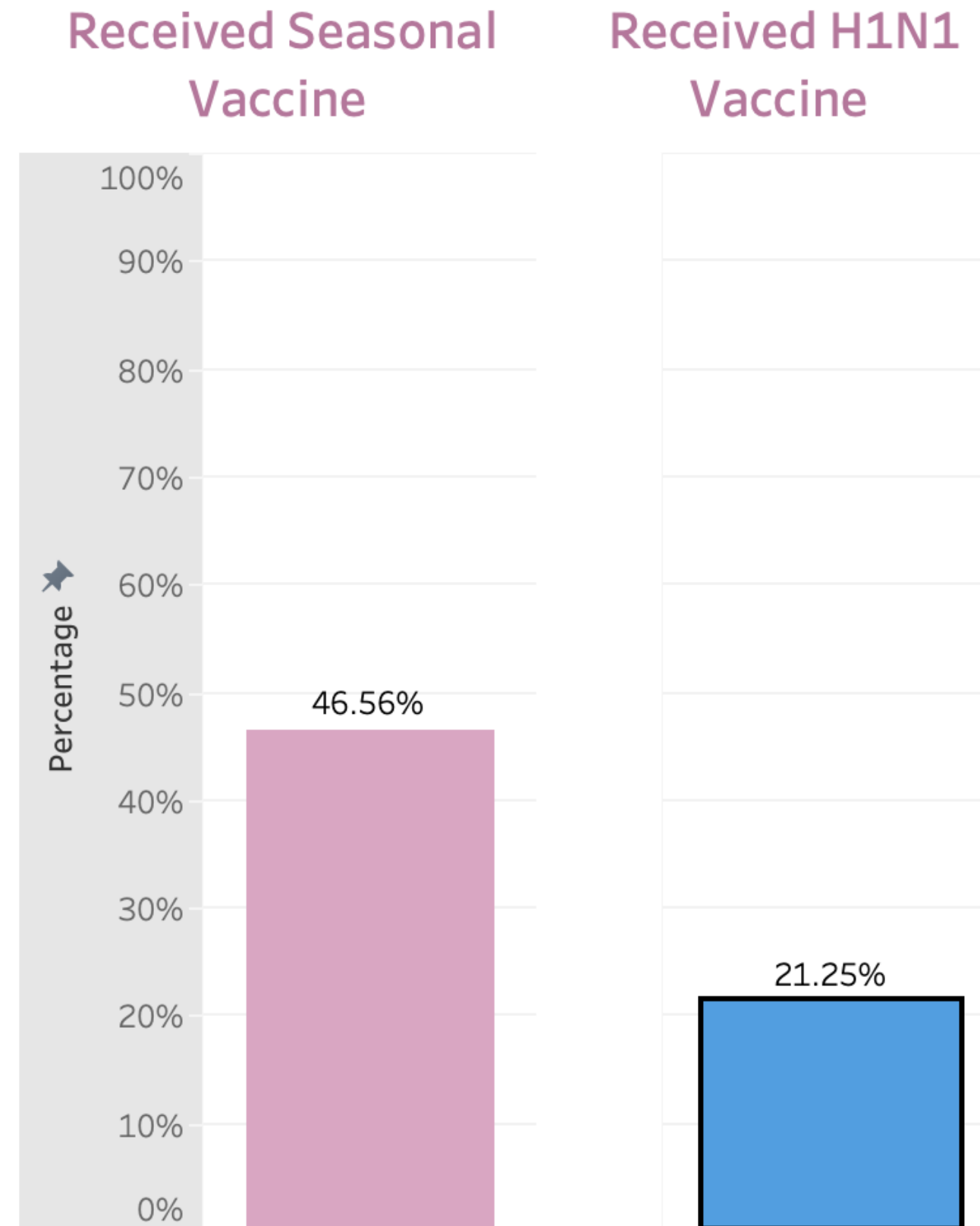
How to increase vaccine acceptance in preparation for future pandemics?



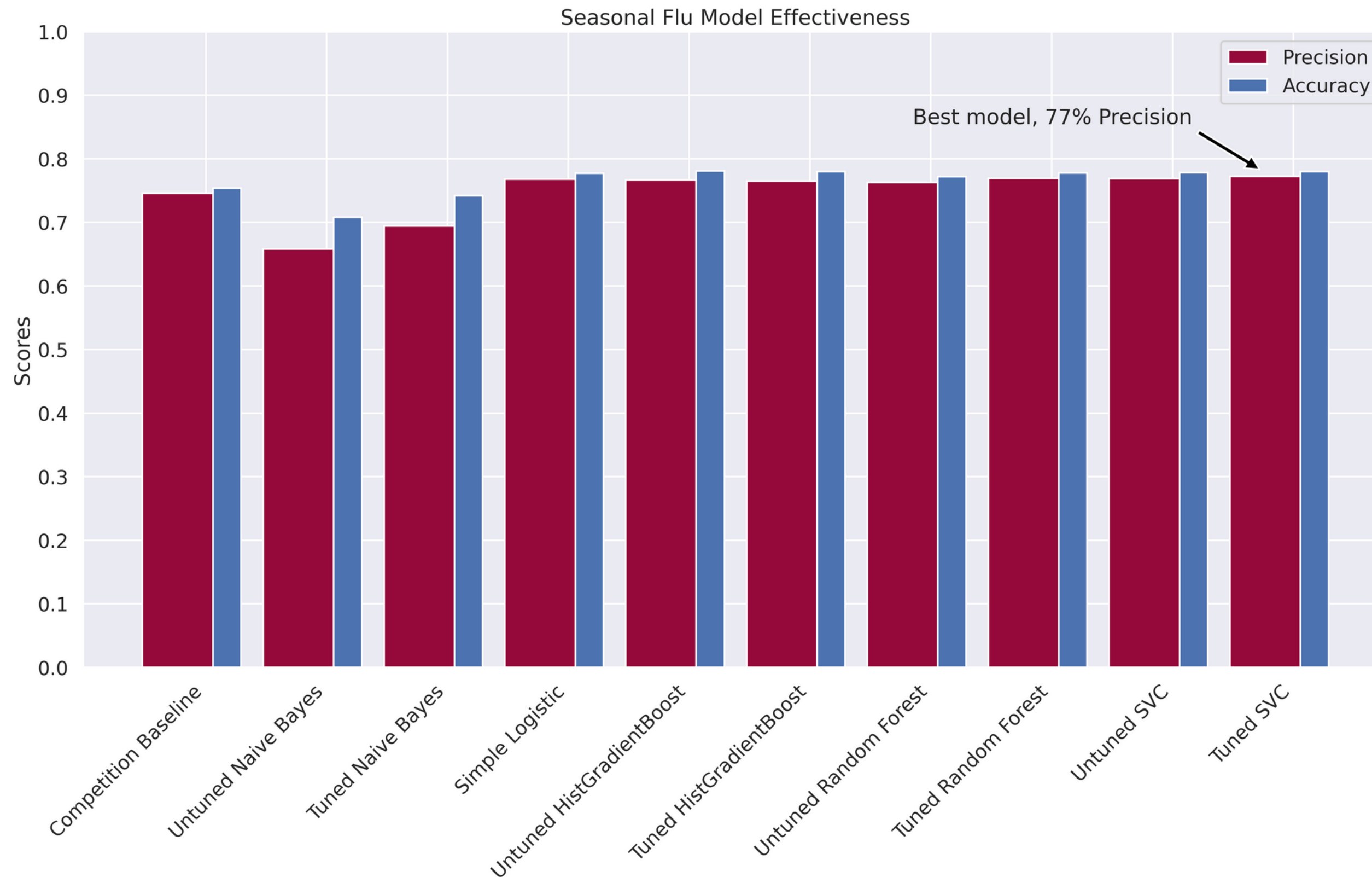
Dataset

- Interviews conducted from September 2009 –June 2010
- 26,707 respondents
- Broad range of demographics

Comparison of Vaccination Status

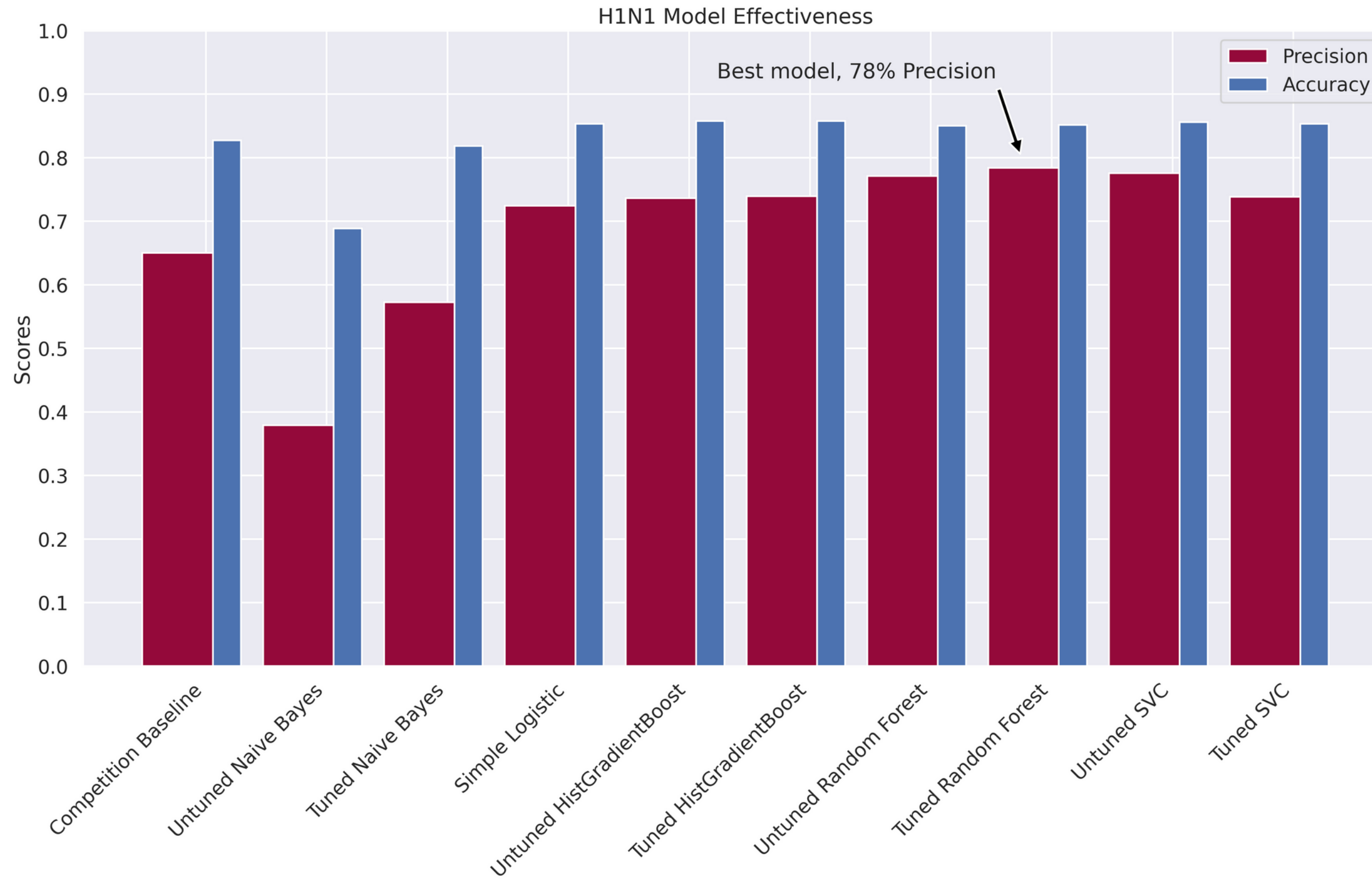


Seasonal Flu Modeling



Precision Metric:
how often are we
predicting that
people will get
vaccinated who
really aren't?

H1N1 Modeling



Best Models

78% Precision

Tuned Random Forest - H1N1

Actual	No vaccine	Vaccine
	Predicted	Predicted
No vaccine	True Neg 4080	False Pos 127
Vaccine	False Neg 674	True Pos 461

77% Precision

Tuned SVC - Seasonal Flu

Actual	No vaccine	Vaccine
	Predicted	Predicted
No vaccine	True Neg 2324	False Pos 543
Vaccine	False Neg 633	True Pos 1842

Most important features

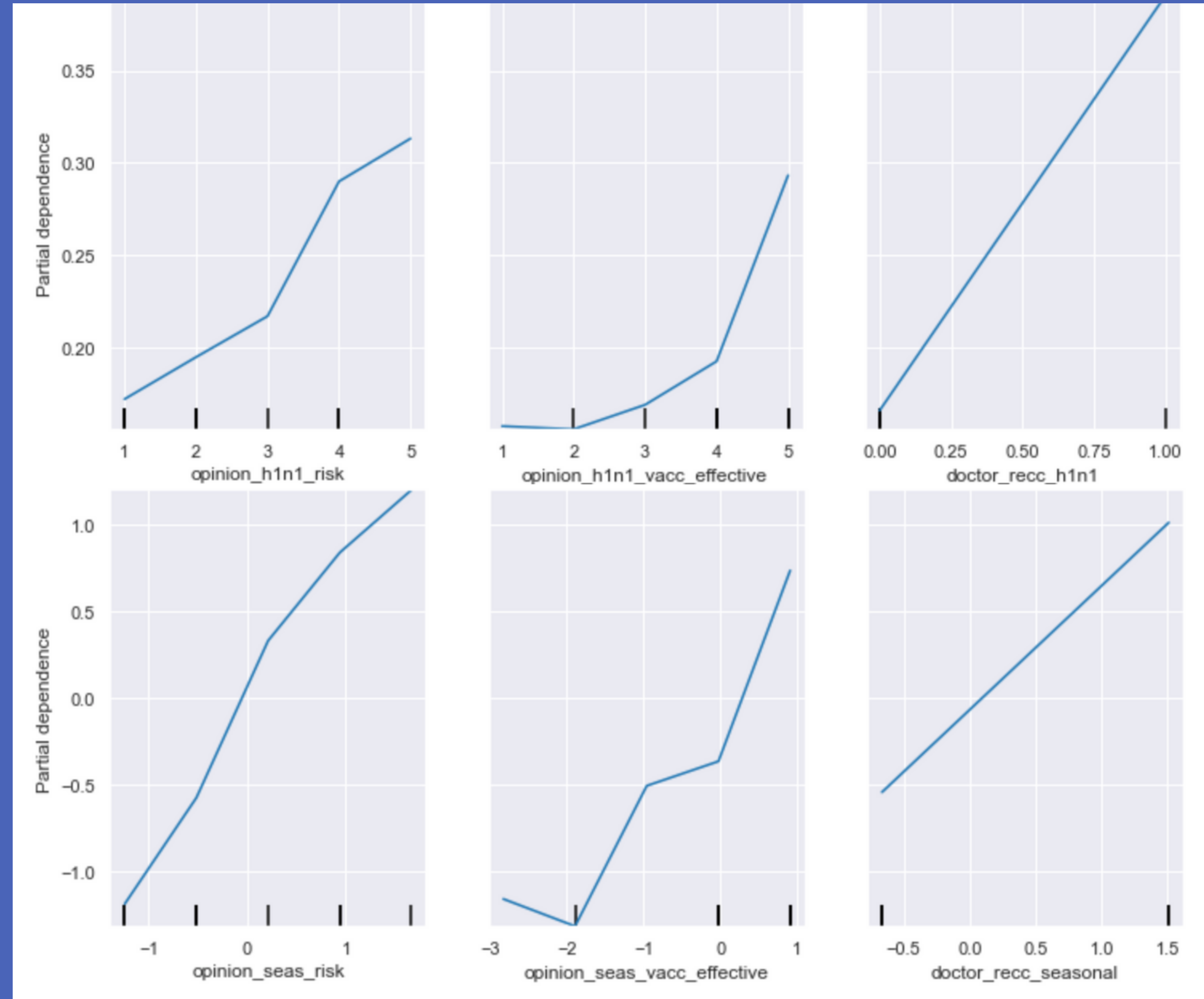
H1N1

Seasonal

Opinion on getting sick without vaccine

Opinion on vaccine effectiveness

Was vaccine recommended by doctor



Demographics Matter



**Least likely to get the
H1N1 vaccine:**

35-44 year olds

Those living in poverty

Unmarried individuals



Recommendations

- 1.) **Emphasize to medical professionals to consistently recommend vaccinations for their patients**
- 2.) **Public awareness campaign about the risk of getting sick without a vaccine as well as the effectiveness of vaccines**
- 3.) **Target outreach efforts most on those in the 35-44 year old age range, those living in poverty, and those who are not married**

Questions or comments?

Get in touch!



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Jeff Beech

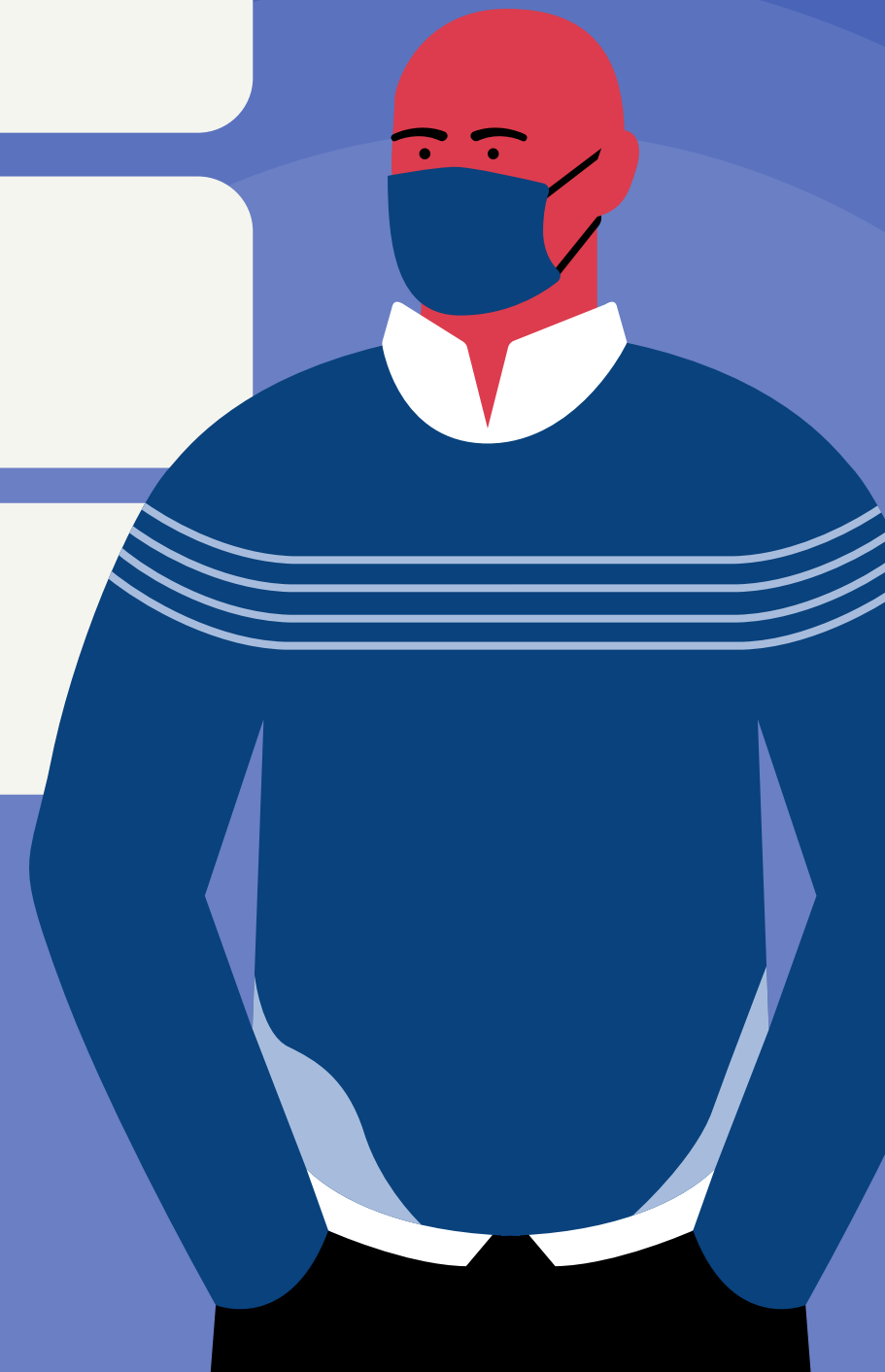
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BEST

0.8578

CURRENT RANK

395

COMPETITORS

3548