### Challenge
- Sales & marketing efforts lacked engagement
  - Need to improve digital channel performance
- Needed analytics-based physician segmentation
- Overwhelming amount of existing client data:
  - Physician attributes
  - Prescribing patterns
  - Much of it is purchased & under-leveraged

### Solution
- Developed a data dictionary from multiple sources
  - Transformed, profiled, and tested every data set
    - Deep understanding of features' effect on engagement
- Group doctors with unsupervised ML
  - Analytically-driven feature selection
- Analysis on groups' engagement across sub-channel tactics
  - Digital and face-to-face
- Delivered 2 complementary ML models
  - Predict values for key attributes, where missing
  - Predict cluster for future physicians in database
- Prescribed specific tactics and timing for groups of doctors

### Impact
- Justified and enhanced value of existing purchased data
  - Better understanding of how to predict engagement
- Delivered novel insights; new ways to improve data capture
- Learned new, more effective approach to segmentation
  - Superior to traditional manual categorization
- Uncovered better engagement patterns
  - New groups of customers with engagement potential
  - Effective combos of channel, tactic, timing, & content

**Problem type:** Segmentation

**Universal relevance:** Most businesses can only make guesses about how likely prospective clients are to engage with their marketing channels. Accurate engagement predictions allow re-prioritization of marketing budgets to ensure efforts produce better outcomes.