



# A Case Study: The Use of Predictive Analytics to Optimize the Processing of Personal Injury Accident Patient Accounts

## *The Problem:*

A medical reimbursement company works on behalf of healthcare providers by coordinating patient benefits across multiple payers in order to deliver the largest reimbursements in the least amount of time. They do this by investigating the various details of a claim to uncover all sources of available insurance benefits including medical payments (med-pay) or personal injury protection (PIP), uninsured / underinsured motorists, umbrella insurance and workers' compensation.

Pursuing first party insurance benefits can be costly for an already resource-strapped business office. Billers can spend an excessive amount of time investigating and verifying med-pay/PIP coverage. These primary benefits are "first come first serve" to the provider or physician who is able to bill the fastest. In certain situations, providers will suffer from increased AR days because they pursued med-pay/PIP benefits, only to determine that those benefits were exhausted to another provider or physician, or aren't available because the patient resides in a state that doesn't mandate such coverage or coverage levels.

## *The Solution:*

Exceptional Outcomes developed and implemented a med-pay/PIP predictive model that provides a case's expected reimbursement from medical payments or PIP insurance coverage. In the case of a 'fault' state, it does this without knowledge if medical payments coverage is in effect.

The model only uses information that is upstream from the First Party investigation process. This information includes:

- The patient's age and gender
- The state and zip code that the patient resides in.
- If the patient has government and/or commercial health insurance
- The property & casualty insurance company covering the patient (if known), and if the property & casualty insurance was identified at the time of admission.
- The amount of time since the accident.
- The patient balance.

The model was developed to determine which cases should be processed for first party reimbursement and which ones should go straight to health reimbursement. The premise was that that use of the model would decrease average AR days, since cases with little or no first party coverage would not proceed through the first party reimbursement process. Use of the model would also increase gross recovery per billing specialist since claims with higher expected reimbursement would be worked before benefit degradation or exhaustion.

Back-testing was performed using a set of historical data that was excluded from the model generation. The back-test simulated the use of a \$200 expected value threshold, with the premise that cases above the threshold would be worked to recover first party reimbursement while cases lower than the threshold would circumvent the first party process. **The results of the testing showed that the model was 92% accurate in routing claims.**

***The Outcome:***

The model was successfully implemented for one major hospital system for a period of four months. **When implemented across all clients, average AR days is expected to decrease by 55% and total annual recovery is expected to increase by over \$4 million.**

***About  
Exceptional  
Outcomes:***

Exceptional Outcomes is a consultancy with specialties in business analytics, operations research and process excellence. They deliver consulting services, training and software applications to clients in both the public and private sectors.

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