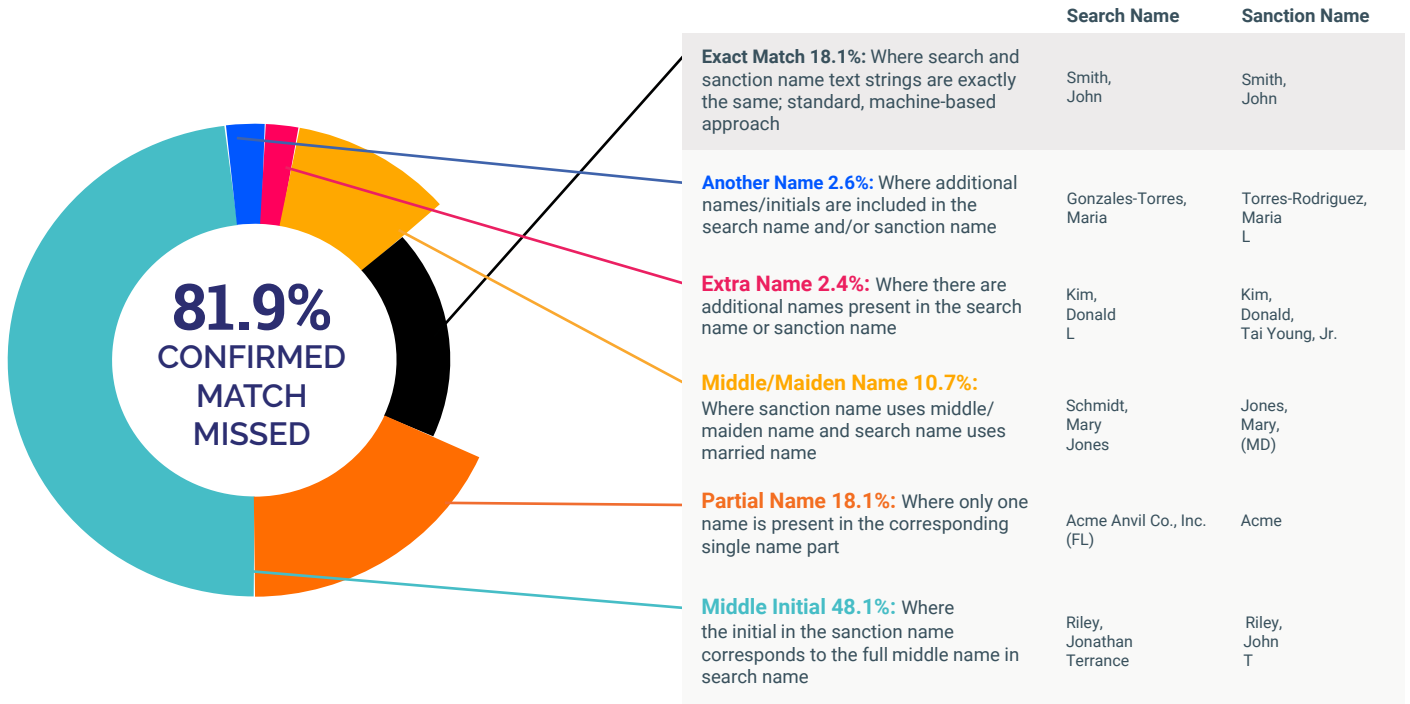# Is It Worth The Extra Effort? An Exact Match Sanction Analysis

We recently had a debate with a potential client about whether the extra steps we take in our approach to exclusion and sanction screening — namely our focus on **Type II errors vs. Type I errors*** unlike most of our competitors (exact vs. partial match approach) — is worth the extra effort. So, being data scientists at heart, we dug into our results over the last year and found some startling results. This analysis shows all the confirmed matches in our system over the last year, with a reconciliation of each one into an aggregate bucket of match type. The startling conclusion is that <20% of confirmed matches over the last 12 months were found on an "exact match" basis (method most employ).

This means that >80% of the confirmed matches would have been missed with this standard approach. EXACT MATCH DOESN'T CUT IT.

81.9% CONFIRMED MATCH MISSED

	Search Name	Sanction Name
Exact Match 18.1%: Where search and sanction name text strings are exactly the same; standard, machine-based approach	Smith, John	Smith, John
Another Name 2.6%: Where additional names/initials are included in the search name and/or sanction name	Gonzales-Torres, Maria	Torres-Rodriguez, Maria L
Extra Name 2.4%: Where there are additional names present in the search name or sanction name	Kim, Donald L	Kim, Donald, Tai Young, Jr.
Middle/Maiden Name 10.7%: Where sanction name uses middle/maiden name and search name uses married name	Schmidt, Mary Jones	Jones, Mary, (MD)
Partial Name 18.1%: Where only one name is present in the corresponding single name part	Acme Anvil Co., Inc. (FL)	Acme
Middle Initial 48.1%: Where the initial in the sanction name corresponds to the full middle name in search name	Riley, Jonathan Terrance	Riley, John T

*Type I vs Type II Errors Illustrated

In science and statistics, the null hypothesis is a general statement that there is no relationship between two things. The primary task of the scientist is to create tests to systematically reject or confirm the null hypothesis with the highest level of certainty possible. In hypothesis testing, a **Type I Error** represents a "false positive" (rejecting the null hypothesis when it's true), which is where a name is deemed a "Confirmed Match" in error. A **Type II Error** (failing to reject a false null hypothesis) represents a "false negative", which is where a name is "Ruled Out" in error.

Which scenario below is most concerning? Which poses a bigger net risk, I (Jane), or II (Michael)?

I. Jane Smith, Pharmacist
Clean history, unblemished. Accidentally confirmed match, deemed "bad apple".

II. Michael Jones, Surgeon
Prior Medicare Fraud in different state. Accidentally deemed "good apple".

Answer: Obviously it's II Michael!

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