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Colorado AI Testing Requirements For Life Insurers

Colorado Division of Insurance (Division) Draft Testing Regulation

Life insurer licensed to do business in Colorado

Does underwriting process employ External Consumer Data and Information Source (ECDIS)?

No → Out of Scope

Yes → Provide Division report summarizing testing results with content required by Section 9; Report due April 1, 2024 (and annually thereafter).

Estimate race or ethnicity of all proposed insureds that have applied for coverage on or after initial use of ECDIS.

Use Bayesian Improved First Name Surname Geocoding (BIFSG) and the following categories: Hispanic, Black, Asian Pacific Islander (API) and White

Proceed to below testing steps

SECTION 6

Application Approval Decision Testing — Logistic Regression

Calculate whether Hispanic, Black and API proposed insureds are disapproved at statistically significant different rate relative to White proposed insureds.

For each BIFSG estimated variable, is p-value less than 0.05?

No → No Further Testing

Yes → Is difference in approval rates 5% or greater as indicated by marginal effects value of each BIFSG variable?

No → No Further Testing

Yes → Conduct Variable Testing

The following factors may be accounted for as control variables in the regression model: policy type, face amount, age, gender and tobacco use.

Estimated race and ethnicity shall be accounted for by including Hispanic, Black and API as dummy variables in the regression model.

SECTION 7

Premium Rate Testing — Linear Regression

Determine if statistically significant difference in premium rate per $1,000 of face amount for policies issued to Hispanic, Black, and API insureds relative to White insureds.

Per $1,000 of face amount for each BIFSG estimated variable, is p-value less than 0.05?

No → No Further Testing

Yes → Is premium amount per $1,000 of face amount at least 5% more than average premium rate per $1,000 for all policies?

No → No Further Testing

Yes → Conduct Variable Testing

SECTION 8

Conduct Variable Testing:

- First logistic regression model: All variables including ECDIS and traditional underwriting factors
- Second logistic regression model: All variables including ECDIS and traditional underwriting factors along with dummy variables for estimated race and ethnicity
- First linear regression model: All variables including ECDIS and traditional underwriting factors
- Second linear regression model: All variables including ECDIS and traditional underwriting factors along with dummy variables far estimated race and ethnicity

Does ECDIS variable exhibit a difference?

No → No unfair discrimination

Yes → **ECDIS variable and any algorithm or predictive model using the variable is unfairly discriminatory requiring remediation.**

Does ECDIS variable exhibit a difference?

No → No unfair discrimination

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