DEPARTMENT OF REGULATORY

AGENCIES DIVISION OF INSURANCE

3 CCR 702-10

UNFAIR DISCRIMINATION

DRAFT PROPOSED New Regulation 10-2-xx

CONCERNING QUANTITATIVE TESTING OF EXTERNAL CONSUMER DATA AND INFORMATION SOURCES, ALGORITHMS, AND PREDICTIVE MODELS USED FOR LIFE INSURANCE UNDERWRITING FOR UNFAIRLY DISCRIMINATORY OUTCOMES

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Section 1 Authority

This regulation is promulgated and adopted by the Commissioner of Insurance under the authority of §§ 10-1-109 and 10-3-1104.9, C.R.S.

Section 2 Scope and Purpose

This regulation establishes the requirements for life insurers' quantitative testing of external consumer data and information sources, algorithms, and predictive models to ensure that their use does not result in unfairly discriminatory insurance practices.

Section 3 Applicability

This regulation shall apply to all life insurers authorized to do business in the state of Colorado.

Section 4 Definitions

A. "Algorithm" shall have the same meaning as set forth in § 10-3-1104.9, C.R.S.

B. "Bayesian Improved First Name Surname Geocoding" or "BIFSG" means, for the purposes of this regulation, the statistical methodology developed by the RAND corporation for estimating race and ethnicity.

C. "Division" means, for the purposes of this regulation, the Colorado Division of Insurance.

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D. “External Consumer Data and Information Source” or “ECDIS” means, for the purposes of this regulation, a data source or an information source that is used by a life insurer to supplement or supplant traditional underwriting factors. This term includes credit scores, credit history, social media habits, purchasing habits, home ownership, educational attainment, licensures, civil judgments, court records, occupation that does not have a direct relationship to mortality, morbidity or longevity risk, consumer-generated Internet of Things data, biometric data, and any insurance risk scores derived by the insurer or third-party from the above listed or similar data and/or information source. ECDIS does not include traditional underwriting factors.

E. “Insurance Practice” means, for the purposes of this regulation, life insurance underwriting.

F. “Internet of Things” means, for the purposes of this regulation, networks of physical objects embedded with sensors, software, and other technologies for the purposes of collecting, transmitting, and exchanging data over the Internet. This definition does not apply to devices that require direct human intervention for data collection and exchange.

G. “Life Insurer” or “insurer” means, for the purpose of this regulation, an entity authorized and licensed by the Commissioner to sell life insurance products in the state of Colorado.

H. “Motor Vehicle Records” means, for the purposes of this regulation, records on Driving Under the Influence/Driving while intoxicated, reckless driving, or excessive speeding.

I. “Policy Type” means, for the purposes of this regulation, either permanent or term life insurance, and if term, the duration of the term.

J. “Predictive Model” shall have the same meaning as set forth in § 10-3-1104.9, C.R.S.

K. “Traditional Underwriting Factors” means, for the purpose of this regulation, the following factors:

1. Information provided by or on behalf of the individual to whom the information relates in response to questions on the application for insurance including medical information, family history, and disability;

2. Occupational information, based on actuarially sound principles, that has a direct relationship to mortality, morbidity, or longevity risk;

3. Behavioral information related to a specific individual, including motor vehicle records and criminal history of non-juvenile felony conviction that, has a direct relationship to mortality, morbidity or longevity risk;

4. MIB data;

5. Prescription drug history;

6. Income, tax, assets, or other elements of a specific person’s financial profile provided on an application for insurance by the applicant; or

7. Digitized or other electronic forms of the information listed above.

L. “Underwriting” means, for the purposes of this regulation, the process of evaluating an individual’s risk factors and determining their insurability and, if coverage is offered, the premium the insurer considers appropriate for the transference of the risk.

M. “Unfairly Discriminate” and “Unfair Discrimination” shall have the same meaning as set forth in § 10-3-1104.9, C.R.S.

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Section 5 Estimating Race and Ethnicity

A. Insurers that employ ECDIS, as well as algorithms and predictive models that use ECDIS, to make or support underwriting decisions, shall perform quantitative testing to evaluate whether the the decisions to offer coverage are unfairly discriminatory based on the race or ethnicity of proposed insureds.

B. Insurers shall estimate the race or ethnicity of all proposed insureds that have applied for coverage on or after the insurer's initial adoption of the use of ECDIS, or algorithms and predictive models that use ECDIS, including a third party acting on behalf of the insurer that used ECDIS, or algorithms and predictive models that used ECDIS, in the underwriting decision-making process, by utilizing:

1. BIFSG and the insureds' or proposed insureds' name and geolocation information included in the application(s) for life insurance shall be used to estimate the race and ethnicity of each insured or proposed insured.

2. For the purposes of BIFSG, the following racial and ethnic categories shall be used: Hispanic, Black, Asian Pacific Islander (API),and White.

Section 6 Application Approval Decision Testing Requirements

A. The initial test shall include application data through December 31, 2023. Subsequent tests shall be performed annually to include additional application data through December 31 of the previous year.

B. Using the BIFSG estimated race and ethnicity of proposed insureds and the following methodology, insurers shall calculate whether Hispanic, Black, and API proposed insureds are disapproved at a statistically significant different rate relative to White applicants for whom the insurer, or a third party acting on behalf of the insurer, used ECDIS, or an algorithm or predictive model that used ECDIS, in the underwriting decision-making process.

1. Logistic regression shall be used to model the binary underwriting outcome of either approved or denied.

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

3. The estimated race or ethnicity of the proposed insureds shall be accounted for by including Hispanic, Black, and Asian Pacific Islander (API) as separate dummy variables in the regression model.

4. Determine if there is a statistically significant difference in approval rates for each BIFSG estimated race or ethnicity variable as indicated by a p-value of less than .05.

    a. If there is not a statistically significant difference in approval rates, no further testing is required.

    b. If there is a statistically significant difference in approval rates, the insurer shall determine whether the difference in approval rates is five (5) percentage points or greater as indicated by the marginal effects value of each BIFSG estimated race or ethnicity variable.

        i. If the difference in approval rates is less than five (5) percentage points,

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no further testing is required.

ii. If the difference in approval rates is five (5) percentage points or greater, further testing is required as described in Section 8.

Section 7 Premium Rate Testing Requirements

A. The initial test shall include premium rate data through December 31, 2023. Subsequent tests shall be performed annually to include additional premium rate data through December 31 of the previous year.

B. Using the insureds' BIFSG estimated race and ethnicity, insurers shall determine if there is a statistically significant difference in the premium rate per $1,000 of face amount for policies issued to Hispanic, Black, and API insureds relative to White insureds for whom the insurer, or a third party acting on behalf of the insurer, used ECDIS, or an algorithm or predictive model that used ECDIS, in the underwriting decision-making process.

1. Linear regression shall be used to model the continuous numerical outcome of premium rate per $1,000 of face amount.

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

3. The estimated race or ethnicity of the proposed insureds shall be accounted for by including Hispanic, Black, and Asian Pacific Islander (API) as separate dummy variables in the regression model.

4. Determine if there is a statistically significant difference in the premium rate per $1,000 of face amount for each BIFSG estimated race or ethnicity variable as indicated by a p-value of less than .05.

   a. If there is not a statistically significant difference in premium rate per $1,000 of face amount, no further testing is required.

   b. If there is a statistically significant difference in premium rate per $1,000 of face amount, determine whether the premium rate per $1,000 of face amount is at least 5% more than the average premium rate per $1,000 for all policies.

      i. If the difference in premium rate per $1,000 of face amount is less than 5%, no further testing is required.

      ii. If the difference in premium rate per $1,000 of face amount is 5% or greater, further testing is required as described in Section 8.

Section 8 Variable Testing Requirements

A. If the testing required in Section 6 indicates the difference in approval rates is five (5) percentage points or greater as described in Section 6.A.4.b.ii. insurers shall further test the ECDIS, or algorithm or predictive model that uses ECDIS, to identify the specific variable(s) contributing to the observed differences.

1. Two separate logistic regression models shall be used to model the binary underwriting outcome of either approved or denied.

2. All variables including ECDIS and traditional underwriting factors shall be included in the

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first model, observing the coefficients for each variable.

3. All variables including ECDIS and traditional underwriting factors shall be included in the second model along with dummy variables for estimated race and ethnicity, observing the coefficients for each variable.

4. The models' coefficients for each ECDIS variable shall be compared and any difference noted. If any ECDIS variable exhibits a difference, that ECDIS variable, and the algorithm or predictive model that uses that ECDIS variable, is deemed to have a direct relationship to a disproportionate negative outcome and is thus unfairly discriminatory requiring remediation.

5. Insurers shall immediately take reasonable steps developed as a part of the risk management framework to remediate the unfairly discriminatory outcome identified in Section 8.A.4. including any additional testing necessary to demonstrate the effectiveness of the remediation.

B. If the testing required in Section 7 indicates the difference in premium rate per $1,000 of face amount is 5% or greater as described in Section 7.A.4.b.ii., insurers are required to identify the specific variable(s) contributing to the observed differences.

1. Two separate linear regression models shall be used to model the continuous numerical outcome of premium rate per $1,000 of face amount.

2. All variables including EDCIS and traditional underwriting factors shall be included in the first model, observing the coefficients for each variable.

3. All variables including ECDIS and traditional underwriting factors shall be included in the second model along with dummy variables for estimated race and ethnicity, observing the coefficients for each variable.

4. The models' coefficients for each ECDIS variable shall be compared and any difference noted. If any ECDIS variable exhibits a difference, that ECDIS variable, and the algorithm or predictive model that uses that ECDIS variable, is deemed to have a direct relationship to a disproportionate negative outcome and is thus unfairly discriminatory requiring remediation.

5. Insurers shall immediately take reasonable steps developed as a part of the risk management framework to remediate the unfairly discriminatory outcome identified in Section 8.B.4. including any additional testing necessary to demonstrate the effectiveness of the remediation.

Section 9 Reporting Requirements

A. For each ECDIS, and algorithm and predictive model that uses ECDIS, insurers shall provide to the Division a report summarizing the results of the testing required in Sections 6 and 7 and, if necessary, Section 8. The report shall include the following components:

1. Application Approval Decision Testing

a. The number of applications included in the dataset in Section 6 as well as the total number of applications received overall for the period beginning with the initial adoption of the use of ECDIS, as well as algorithms and predictive models that use ECDIS.

i. The basis for any applications not included in the dataset in Section 6.

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ii. The percentage of each BIFSG estimated race or ethnicity.

b. The factors accounted for indicated in Section 6.A.2.

c. The difference, if any, in the approval rates for Hispanic, Black, and API proposed insureds.

d. The name and version of each algorithm and/or predictive model subjected to testing.

2. Premium Rate Testing

a. The total number of policies included in the data set in Section 7 as well as the total number of policies issued overall for the period beginning with the initial adoption of the use of ECDIS, as well as algorithms and predictive models that use ECDIS.

i. The basis for any policies not included in the dataset in Section 7.

ii. The percentage of each BIFSG estimate race or ethnicity.

b. The factors accounted for indicated in Section 7.A.2.

c. The average premium rate per $1,000 of face amount for Hispanic, Black, and API insureds.

d. The name and version of each algorithm and/or predictive model subjected to testing.

3. Variable Testing

a. List all ECDIS and traditional factors included in the testing described in Section 8.A. and B., as applicable.

b. Results of the regression analysis including the coefficients for each ECDIS variable described in Sections 8.A.2. and 3. and Sections 8.B.2. and 3. and identification of any differences observed as described in Sections 8.A.3. and 8.B.3.

c. Description of the remediation steps taken, the timing of the remediation steps, and subsequent testing described in Sections 8.A.5. and 8.B.5., if necessary.

B. The report shall be submitted to the Division on April 1, 2024 and annually thereafter.

1. The first report shall include application and premium data through December 31, 2023.

2. Subsequent annual reports shall include application and premium data through December 31 of the previous year.

Section 10 Severability

If any provision of this regulation or the application of it to any person or circumstance is for any reason held to be invalid, the remainder of this regulation shall not be affected.

Section 11 Enforcement

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Noncompliance with this regulation may result in the imposition of any sanctions made available in the Colorado statutes pertaining to the business of insurance, or other laws, which include the imposition of civil penalties, issuance or cease and desist orders, and/or suspensions or revocations of license, subject to the requirements of due process.

Section 12 Effective Date

This regulation shall become effective on _____, 2024.

Section 13 History

New Regulation Effective _____, 2024.

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