



STATE OF ILLINOIS OFFICE OF THE AUDITOR GENERAL

Frank J. Mautino, Auditor General

REPORT DIGEST

PERFORMANCE AUDIT

**Release Date:
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Audit performed in
accordance with
House Resolution 816

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EXECUTIVE SUMMARY

CMS Multiple Choice Exams

On May 10, 2018, the Illinois House of Representatives adopted House Resolution Number 816 which directed the Auditor General to conduct a performance audit of the Department of Central Management Services (CMS) to review and assess the Department's automated multiple choice exams for specific position titles listed in the audit resolution. All of the 75 position titles listed in the audit resolution fall under automated testing, Group A titles, or titles that are continuously tested. The resolution specified that the audit include a review of whether those automated multiple choice exams are biased against minority exam takers, either in their content or in their results.

Key findings of the audit include the following:

- Only a small percentage of applicants who apply are hired. During calendar years 2015 through 2018, 226,229 applicants took exams. Of these exams, only 2,585 (1.1%) resulted in an applicant being hired (during the same time period).
- To determine if the automated multiple choice exams are biased against minority exam takers, we examined the process CMS uses to establish and monitor the exams. Bias as it relates to exams and testing is difficult to define and quantify. CMS generally follows the *Uniform Guidelines on Employee Selection Procedures* (29 CFR 1607), which are designed to prevent discriminatory practices, in conducting content validity studies on exams. CMS also conducts thorough statistical analyses to ensure an exam is testing the items it is intended to test. The statistical analyses include reliability testing, correlation analysis, and discrimination index analysis to identify potentially ineffective questions.
- Despite these efforts to ensure tests are fair and afford all applicants an equal opportunity to compete for State jobs, there is a disparity in test grades among different races and ethnic groups for reasons unknown.
- Compared to their ratio of applications and passing grades, White applicants had a high ratio of A grades while Black or African American applicants had a low ratio of A grades. State agencies are required to hire from the group of candidates that received the highest passing grade. If a certain ethnic group is receiving less A grades than other ethnic groups, that ethnic group will not be represented as well in the hiring pool.
- CMS officials could not easily identify which position titles had received a content validity study and could not provide the content validity study for one of ten titles tested. Content validity studies are one of the three types of validity studies outlined in the *Uniform Guidelines* which employers can use to validate employment tests.
- The CMS Test Development Section does not have written policies or procedures for developing exams or for conducting validity studies and statistical analyses of these exams.

The audit contains a total of four recommendations to CMS.

AUDIT SUMMARY AND RESULTS

On May 10, 2018, the Illinois House of Representatives adopted House Resolution Number 816 which directed the Auditor General to conduct a performance audit of the Department of Central Management Services (CMS) to review and assess the Department’s automated multiple choice exams for specific position titles listed in the audit resolution. All of the 75 position titles listed in the audit resolution fall under automated testing, Group A titles. Group A titles are continuously tested titles where anyone can walk in anytime to be tested. The resolution specified that the audit include a review of **whether those automated multiple choice exams are biased against minority exam takers, either in their content or in their results.** (See Appendix A.) Only a small percentage of applicants who apply are hired. During calendar years 2015 through 2018, 226,229 applicants took exams. Of the 226,229 examinations taken, only 2,585 (1.1%) of these resulted in an applicant being hired during calendar years 2015 through 2018.

CMS generally follows the *Uniform Guidelines on Employee Selection Procedures* and conducts thorough statistical analyses of exams. Despite these efforts, there is a disparity in test grades among different races and ethnic groups for reasons unknown.

To determine if the automated multiple choice exams are biased against minority exam takers, we examined the process CMS uses to establish and monitor the exams. Bias as it relates to exams and testing is difficult to define and quantify. CMS generally follows the *Uniform Guidelines on Employee Selection Procedures* (29 CFR 1607), which are designed to prevent discriminatory practices, in conducting content validity studies on exams. CMS also conducts thorough statistical analyses to ensure an exam is testing the items it is intended to test. The statistical analyses include reliability testing, correlation analysis, and discrimination index analysis to identify potentially ineffective questions. Despite these efforts to ensure tests are fair and afford all applicants an equal opportunity to compete for State jobs, there is a disparity in test grades among different races and ethnic groups for reasons unknown. According to a CMS official, this disparity is not new and, many years ago, Test Development staff attempted to find the reason for the disparity in test grades among different race/ethnic groups. Test Development staff found that the groups that attained lower overall test grades typically had significantly less formal education. The official added that this finding, coupled with socioeconomic factors and less opportunity, may contribute to the disparity. (pages 14-21, 30-33)

Auditors identified the following issues:

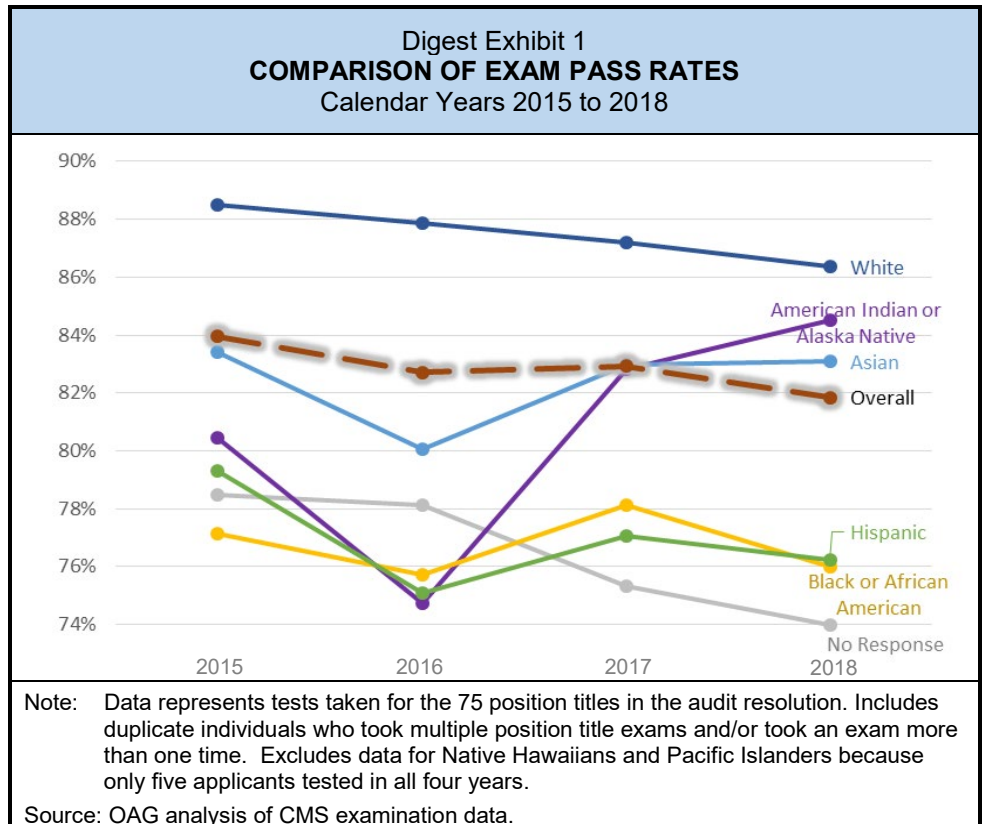
- CMS officials could not easily identify which position titles had received a content validity study. Content validity studies are one of the three types of validity studies outlined in the *Uniform Guidelines* which employers can use to validate employment tests.
- The validity studies conducted by CMS generally followed the *Uniform Guidelines*. However, CMS could not provide the content validity study for one of ten titles tested. CMS officials could not provide the exact date the original exam was implemented, but said it was implemented at some point prior to 1989. (pages 16-18)

CMS officials could not easily identify which position titles received a content validity study and could not provide the content validity study for one of ten titles tested.

- The CMS Test Development Section does not have written policies or procedures for developing exams or for conducting validity studies and statistical analyses of these exams. (pages 21-22)
- Six post-exam survey responses (out of 6,300 survey responses over four calendar years) that are applicable to exam content were not provided to the Test Development Section. (pages 23-24)
- Sixty-four applicants consisting of 127 entries (out of 226,229 examinations over four calendar years) were allowed to retake exams within 30 days, which is a violation of the Illinois Personnel Rules. (pages 24-25)

Applicant Demographics

CMS provided data on applicants that sat for exams during calendar years 2015 through 2018 for the 75 position titles in the audit resolution. Over the four calendar years, the proportion of applicants in each ethnicity category remained approximately the same. The overall pass rate ranged from a high of 84.0 percent in 2015 to a low of 81.8 percent in 2018, with an average of 82.9 percent. The pass rate for White test takers was consistently above the overall pass rate, with an average of 87.6 percent, while the remaining ethnicity categories were generally below the overall pass rate. However, for 2018, the pass rates for both Asian applicants (83.1%) and American Indian or Alaska Native applicants (84.5%) also rose above the overall pass rate. The 2018 pass rates ranged from 86.4 percent (White applicants) to 76.0 percent (Black or African American applicants).



Compared to their ratio of applications and passing grades, White applicants had a high ratio of A grades while Black or African American applicants had a low ratio of A grades.

If a certain ethnic group is receiving less A grades than other ethnic groups, that ethnic group will not be represented as well in the hiring pool.

White applicants had a high ratio of A grades compared to their ratio of applications and passing grades. Conversely, Black or African American applicants had a low percentage of A grades compared to their ratio of applications and passing grades. State agencies are required to hire from the group of candidates that received the highest passing grade. Therefore, if a certain ethnic group is receiving less A grades than other ethnic groups, that ethnic group will not be represented as well in the hiring pool. (pages 28-33)

Digest Exhibit 2 PASSING GRADE PERCENTAGES BY ETHNICITY CATEGORY Calendar Years 2015 to 2018					
Ethnicity Category	% of As	% of Bs	% of Cs	% of Total Passing Grades	% of Total Applicants
White	71.4%	59.9%	42.0%	58.8%	55.7%
Black or African American	12.2%	21.1%	31.2%	21.1%	22.8%
Hispanic or Latino	4.7%	7.1%	10.2%	7.2%	7.7%
Asian	2.3%	2.4%	3.0%	2.5%	2.5%
American Indian or Alaska Native	0.4%	0.4%	0.4%	0.4%	0.4%
No Response	9.0%	9.2%	13.1%	10.1%	10.9%
<p>Note: Data represents tests taken for the 75 position titles in the audit resolution. Includes duplicate individuals who took multiple position title exams and/or took an exam more than one time. Excludes data for Native Hawaiians and Pacific Islanders because only five applicants tested in all four years.</p> <p>Source: OAG analysis of CMS examination data.</p>					

RECOMMENDATIONS

The audit report contains four recommendations to the Department of Central Management Services. The Department agreed with the recommendations. Appendix E to the audit report contains the agency responses.

This performance audit was conducted by staff of the Office of the Auditor General.

SIGNED ORIGINAL ON FILE

JOE BUTCHER
Division Director

This report is transmitted in accordance with Section 3-14 and 3-15 of the Illinois State Auditing Act.

SIGNED ORIGINAL ON FILE

FRANK J. MAUTINO
Auditor General

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