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Exploring Racial, Ethnic, and Gender Disparities in the Military Justice System

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Abstract

This report addresses an FY 2020 NDAA mandate to assess racial, ethnic, and gender (REG) disparities in the military justice system (MJS). To do this, we collected and assessed relevant data from the military services and used quantitative techniques to measure disparities for several MJS outcomes. Specifically, we used regression models to determine whether controlling for other factors increased or decreased average REG disparities and whether disparities persisted even after taking these control variables into account. Across services, Black enlisted personnel were more likely than White enlisted personnel to be investigated and be involved in nonjudicial punishments and courts-martial in some way. Once Black servicemembers' cases were adjudicated, they were less likely to be found guilty of the charged offenses. These results remained even after controlling for the other factors. The results indicate that policy-makers should study how outcomes differ depending on whether the initial investigation is conducted by a professional military law enforcement agency or by the command, how commanding officers make their disposition decisions, and the relative strengths of cases brought against Black versus White servicemembers.

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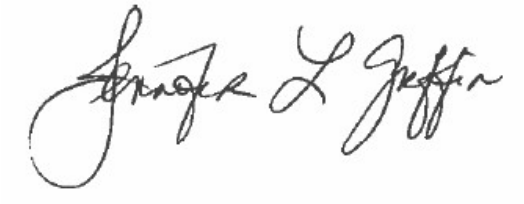

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*The work for this document was completed in July 2022 and may not reflect developments since then. Final publication of this product was delayed due to DOD procedures for review and release.

Executive Summary

Background

Section 540I of the Fiscal Year 2020 National Defense Authorization Act (FY 2020 NDAA) required the secretary of defense, in consultation with the secretaries of the military departments and the secretary of homeland security, to:

- Issue guidance that establishes criteria to determine when data indicating possible racial, ethnic, or gender (REG) disparities in the military justice process should be further reviewed and describes how such a review should be conducted
- Conduct an evaluation to identify the causes of any REG disparities identified in the military justice system (MJS) and take steps to address the identified causes, as appropriate

The Office of the Executive Director for Force Resiliency within the Office of the Under Secretary of Defense for Personnel and Readiness asked CNA to provide analytic support to fulfill these requirements. CNA addressed four research questions:

1. What data elements should be tracked, and what disparity indicators should the Department of Defense (DOD) use to monitor trends in MJS outcomes and take appropriate policy actions?
2. How much of the required data currently exist and to what extent are they standardized across the services?
3. Do the existing MJS data reveal any differences in military justice outcomes by REG?
4. Can we identify any specific factors (including bias) that contributed to observed outcome disparities?

The results for the first research question, which support fulfilling the first NDAA requirement, are reported in the document titled, *How to Use Administrative Data to Measure and Interpret Racial, Ethnic, and Gender Disparities in Military Justice Outcomes.* This report describes how we addressed the remaining three research questions to support fulfilling the second NDAA requirement.

Approach

To manage the scope of this effort within the study resources, we limit our analyses to the regular, active duty enlisted forces of each service. To execute the analyses, we constructed multiple datasets for each service, with each dataset comprising records of MJS incidents reported and resolved over the seven years from fiscal year (FY) 2014 through FY 2020. Each incident record includes descriptive features of the incident, including the REG of the accused servicemember. The constructed datasets follow each incident record through various steps in the MJS, but no dataset follows incidents seamlessly from initial reporting to final resolution and they vary in terms of level of detail. Thus, our dataset construction also served as a check on data completeness and allowed us to determine which REG disparities in incident outcomes can currently be tracked for each service.

We then applied quantitative methods (primarily regression analysis) to calculate unconditional and conditional service-specific REG disparity measures for as many MJS outcomes as the data allowed, controlling for other descriptive features of the offender and the incident. Unconditional disparities are measured for the first-observed outcome in each dataset and are based on comparisons between those experiencing the outcome and those in the service's entire enlisted population. Conditional disparities are measured for outcomes that occur later in the MJS process and are based on comparisons between the servicemembers who experienced the outcome and those who experienced the outcome associated with the previous observed step in the MJS process. For example, for some services, we calculate REG disparities in guilty findings conditional on having completed nonjudicial punishment (NJP) or court-martial (CM) proceedings. This allows us to determine accurately where REG disparities first appear in the MJS and how long they persist.

Results

There are many detailed results presented in the report. Here, we summarize these results by answering the research questions they addressed.

Research question #2: How much of the required data currently exist and to what extent are they standardized across the services?

Most of the MJS data exist and the services generally collect the same data elements, but the ways the data are collected and stored result in data elements and structures that do not always support quantitative analysis and they are not consistent across services. Specifically, despite recent service efforts to improve data collection and storage, the data are still stored in multiple data systems across multiple commands within each service. Thus, it remains cumbersome to follow incidents through the MJS and to prepare the data necessary to compute

REG disparities. This, in turn, limits REG disparity analysis for all MJS incidents and creates outcomes that vary by service.

Research question #3: Do the existing MJS data reveal any differences in military justice outcomes by REG?

Our data analysis confirms that there were significant racial and gender disparities in MJS outcomes during the study period.

Across services and outcomes, we found positive racial disparities: in every service, Black enlisted personnel were more likely than White enlisted personnel to be investigated, be involved in NJP in some way, and be involved in CMs in some way, even after controlling for the other factors included in the regression models. Yet, conditional on a case progressing far enough in the MJS to have an adjudicated outcome, Black enlisted personnel were no more likely—and, in many cases, were less likely—than their White counterparts to be found guilty.

In contrast, across services and outcomes, we found negative gender disparities: in every service, female enlisted personnel were less likely than male enlisted personnel to enter the MJS and, conditional on the case progressing to an adjudication point, they were less likely to be found guilty.

Finally, we found few significant ethnic disparities in MJS outcomes. Across services and for most outcomes, Hispanic and non-Hispanic enlisted personnel experienced the modeled outcomes at similar rates.

Research question #4: Can we identify any specific factors (including bias) that contributed to observed outcome disparities?

It is impossible to determine definitively whether bias exists in the MJS solely based on statistical analysis of administrative data records such as those we used in this study. The analysis did, however, allow us to draw two sets of conclusions regarding causes of MJS disparities.

First, controlling for offender-, incident-, and MJS process-related factors did not eliminate REG disparities, and no specific factor emerged as a leading determinant of MJS disparities. Thus, bias remains on the table as a potential cause.

Second, by using the data to show where in the MJS disparities occur, we provide information to help the services decide where to investigate further. Specifically, the largest positive racial disparities were associated with the first-observed outcomes. This suggests that it is important to get more clarity on how and why Black enlisted servicemembers enter the MJS. It would be especially valuable to better understand how outcomes differ depending on whether the initial investigation is conducted by a professional military law enforcement agency (LEA) or by the

command and how commanding officers (COs) make their disposition decisions, and to evaluate the relative strengths of cases brought against Black versus White servicemembers.

Recommendations related to data collection and analysis

We make the following recommendations to improve data collection and analytical processes.

- Provide the services with sufficient funding and support to ensure that MJS incident and case data are collected, stored, and made usable for conditional REG disparity analysis at each step in the MJS
- For future data assessments, follow the two key steps recommended in the companion document: support service-specific studies and provide the time and structure for effective collaboration between researchers and MJS experts in each service
- Continue efforts to collect complete NJP information
- Include common case control numbers in all MJS data systems so that datasets associated with different parts of the MJS can be merged and cases can be followed from investigation through initial disposition to final resolution
- Populate variables related to offender characteristics, especially REG, by pulling data from authoritative personnel records
- Ensure that all relevant dates are populated
- Define all data fields to include all potential outcomes or values, including indicators that a variable is not applicable for a given incident or that the incident has not yet proceeded far enough through the MJS for the variable to apply
- Use dropdown menus to minimize data error and inconsistency due to hand entry

Recommendations related to REG disparities

To address the identified MJS outcome disparities, we make the following recommendations that range from specific to general:

- Seek to address disparities, not bias per se. As reported in the companion document, regardless of their causes, disparities may create perceptions of bias and perceptions of bias have negative effects not only on the effectiveness of the MJS, but also readiness.
- Begin by studying how outcomes differ depending on whether the initial investigation is conducted by a professional military LEA or by the command, how COs make their

disposition decisions, and the relative strengths of cases brought against Black versus White servicemembers.

- Follow additional steps recommended in the companion document. Specifically, conduct assessments and report results on a regular basis. Do not wait until negative publicity occurs and do not respond only to disparities identified in raw data.
- Develop procedures and systems for holding leaders accountable for the proper use of discretion across the full range of MJS outcomes. Discretion is a necessary part of law enforcement and justice, but it is also where bias (implicit or explicit) can enter. It is leadership's job to think more broadly about the role of discretion in the MJS.

Contents

Introduction

This study was sponsored by the Office of the Executive Director for Force Resiliency within the Office of the Under Secretary of Defense for Personnel and Readiness to address a congressional mandate to assess racial, ethnic, and gender (REG)[1] disparities in the military justice system (MJS). Specifically, section 540I(b) of the Fiscal Year 2020 National Defense Authorization Act (FY 2020 NDAA) required the secretary of defense, in consultation with the secretaries of the military departments (MILDEPS) and the secretary of homeland security, to:

1. Issue guidance that establishes criteria to determine when data indicating possible REG disparities in the military justice process should be further reviewed and describes how such a review should be conducted
2. Conduct an evaluation to identify the causes of any REG disparities identified in the MJS and take steps to address the causes of any such disparities, as appropriate [1]

To address the first FY 2020 NDAA requirement, we created a draft guide for data collection, analysis, and reporting that describes how the services should make ongoing assessments of REG disparities in MJS outcomes and communicate the results of those assessments to important stakeholders. That effort answered one of four research questions from the study proposal, "What data elements should be tracked, and what disparity indicators should the Department of Defense (DOD) use to monitor trends in MJS outcomes and take appropriate policy actions?" The results are reported in the document, *How to Use Administrative Data to Measure and Interpret Racial, Ethnic, and Gender Disparities in Military Justice Outcomes* [2].

This report provides results related to the second FY 2020 NDAA requirement. These results answer the remaining research questions from the study proposal:

- How much of the required data currently exist and to what extent are they standardized across the services?
- Do the existing MJS data reveal any differences in military justice outcomes by REG?
- Can we identify any specific factors (including bias) that contributed to observed outcome disparities?

[1] Throughout this document, we use *REG* to stand for both "racial, ethnic, and/or gender" and "race, ethnicity, and/or gender."

Focus, scope, and results

To set expectations, we begin the report by discussing decisions made to refine the study focus, scope the analysis, and apply the results. These decisions followed from the congressional mandate in the FY 2020 NDAA, the research questions in the proposal, and three additional study parameters:

- The requirement to study REG disparities in five of the six US armed services—the Air Force (USAF),[2] the Army (USA), the Coast Guard (USCG), the Marine Corps (USMC), and the Navy (USN)
- The proposal tasking to apply quantitative analytical techniques to existing MJS data
- The timeline of approximately 9 months for completing the analysis presented in this report[3]

Refining the study focus

The FY 2020 NDAA directed the secretaries of defense, homeland security, and the MILDEPs to identify the causes of REG disparities in MJS outcomes. The project proposal then specified that we would consider bias as a contributing factor and, in the *How To* document [2], we showed that there is indeed considerable concern among members of Congress, the public, and the services themselves that the MJS is affected by bias.

Therefore, it is important to understand what the administrative data on which this analysis is based can tell us about bias in the MJS, as well as about unlawful discrimination, which is a related, but separate, concept.[4] The study focus was then refined to reflect these understandings.

What administrative data can say about bias

In dictionary terms, bias is prejudice for or against one thing, person, or group compared with another, usually in a way that is considered to be unfair [4]. To cause REG disparities in MJS

[2] We did not study the Space Force: it is too new and too small to have enough data to support statistical analysis.

[3] The timeline for the whole study was 12 months: August 2021 through July 2022. Following administrative requirements and background research efforts, the data collection process began in mid-September, leaving approximately 9 months for completion of all data-related activities (e.g., data collection and preparation, data analysis, interpretation and documentation of results, and internal review) and initial submission of this report by June 15, 2022.

[4] We raise the issue of unlawful discrimination because it was raised in the 2019 Government Accountability Office (GAO) report [3] that recommended the two FY 2020 NDAA requirements to which this study is a response.

outcomes, such prejudices must be both held *and turned into relevant actions* by MJS and other military decision-makers. Although MJS administrative data capture some of these actions, the data do not (and cannot) capture the motivations underlying them.

With the application of appropriate multivariate analytical techniques, administrative data can, however, be used to measure the statistically significant correlations between MJS outcomes and not only REG, but also other relevant factors. These correlations can, in turn, provide more precise measures of REG disparities and support inferences about bias by taking the other factors off the table.

What administrative data can say about unlawful discrimination

In the military context, unlawful discrimination happens when the DOD, the Department of Homeland Security (DHS), or the MILDEPS treat servicemembers differently—either as a matter of policy or practice—based on their race, ethnicity, gender, or religion.[5] Both plaintiffs and defendants can use statistical analyses of administrative data as evidence in lawsuits to support or contradict allegations that such unlawful discrimination has occurred.

It is important to note, however, that servicemembers can only bring lawsuits based on intentional discrimination; they have no ability to bring lawsuits based on unintentional, disparate impact discrimination. This limitation arises because servicemembers cannot bring lawsuits under Title VII and the Supreme Court has interpreted the Equal Protection clause to apply only to intentional discrimination [5]. The result of this limitation is that, to prove unlawful discrimination, outcome disparities measured with administrative data must be combined with other evidence showing discriminatory intent.[6]

Focus on controlling for other factors and the role of discretion

Based on these understandings of the ways that administrative data can be used to address the issues of interest, our analysis does not aim to determine whether bias exists or whether unlawful discrimination is occurring in the armed forces overall or in any individual service. Instead, for each service, we focus on identifying REG disparities that remain even after controlling for other factors and determining whether these disparities are larger for outcomes involving more discretion on the part of MJS decision-makers.

[5] Compared to other federal employers, the military has, over the years, been granted "unusual flexibility" to meet military requirements by discriminating based on age, disability, gender, and sexual orientation [5].

[6] For a discussion of how statistical analyses and other social science evidence may be used in military discrimination cases, see reference [6] on compelling government interests and diversity policies. For more information about how statistical analysis may be used in civilian cases on both intentional and unintentional discrimination see the Title VI Legal Manual published by the Department of Justice (DOJ) [7].

Scoping the analysis

To implement the data analysis, we made three decisions to define its scope while balancing emphasis on breadth and depth:

- ***Take the data as given.*** Consistent with the research question related to the completeness and cross-service consistency of existing MJS data, we approached our effort as an assessment of the current data systems—the extent to which they contain the required variables in formats that support quantitative analysis, and the ease and efficiency with which the data could be extracted and used.
- ***Prioritize consistency across services.*** Each service implements the MJS in its own way and based on its own culture, and each service maintains different data systems for its MJS data. For this all-service study, however, we made choices to maximize the consistency and comparability of results across services to the extent possible.
- ***Focus on outcomes for enlisted members only.*** We chose to focus on enlisted personnel for two reasons. The first reason has to do with the sample sizes required for meaningful statistical analysis. The size of each enlisted force, the REG distribution of enlisted personnel, and the frequency of enlisted interaction with the MJS all combine to provide sufficiently large sample sizes to support analysis. This is not true for the services' officer corps, which are smaller and less demographically diverse. The second reason is that enlisted members and officers are treated differently in the MJS in a several ways, so it does not make sense to analyze them together.[7]

Using the results

Following the proposal tasking and the refined study focus, we used the administrative MJS data from each service to measure REG outcome disparities while holding other factors constant. For each service, we then used these results to identify where DOD, DHS, and MILDEP leaders should focus their efforts to address identified REG MJS disparities—regardless of whether they result from bias. As discussed in the companion document, disparities that create perceptions of bias can undermine the effectiveness of the MJS and, ultimately, force readiness [2].

The analytical results also serve as starting points for moving forward in two important areas by providing baselines for assessing the following:

[7] For example, officers are not tried by summary courts-martial and can be sentenced to punitive discharge by general courts-martial only, and some punitive articles and punishments apply to enlisted or officers only.

- Impacts of MJS reforms required by the Military Justice Act of 2016 (MJA 2016) and the FY 2022 NDAA
- Value of improved data systems for not only refining disparity measures and conducting ongoing assessments of REG outcome disparities, but also for increasing the efficiency of MJS agencies and processes

Report outline

The main body of this report is divided into sections that apply for all the services and sections that are service specific. The report concludes with a summary of findings that are common across all services, as well as recommendations for how DOD leadership may address identified data shortcomings and REG outcome disparities.

Approach-related sections that apply for all services

The report begins with four approach-related sections that provide information that applies across all services. The first section describes the MJS-based framework that guided our overall approach to the study tasks. The second describes the process used to gather data from the services' multiple MJS-related data systems and the criteria used to assess the data that were provided. The next section describes the methods we used to measure, and the criteria we used to assess, REG outcome disparities in the MJS. The fourth section describes data features that are common across all the data sources and services. Together, these all-service sections are designed to reduce repetition in the service-specific sections that follow.

Results sections for each service

There are five service-specific sections that document the results of the data assessment and the data analysis for the four DOD services we studied and for the USCG. These service-specific sections address the following topics:

- Descriptions and an overall assessment of the MJS data that were provided by each service
- Identification of REG disparities for observed MJS outcomes
- Interpretation of results
- Conclusions drawn

Approach: The Guiding Framework

Our overall approach to the data-related taskings for this study is based on the approach developed and described in the companion *How To* document [2]. Following this approach allows us to add to results from past studies by using a framework-based, step-by-step analysis that not only identifies which MJS outcomes to analyze, but also increases our ability to draw conclusions from the analysis.[8]

Conceptualizing the MJS

To guide our analysis of the MJS data, we created the chart in Figure 1 depicting the flow of a case or incident through four phases of the MJS and identifying key steps in each phase. The sequence of events illustrated in Figure 1 is based on the laws and policies that defined the MJS as of 2019 and are operationalized in the 2019 *Manual for Courts-Martial* (MCM) [8], as well as on additional literature and discussions with MJS subject matter experts (SMEs) from the offices of the services' Judge Advocates General (JAG) and from the office of the DOD General Counsel. Although we know there are service-specific differences in how the Uniform Code of Military Justice (UCMJ) is implemented, the chart is designed to capture the system as it applies to all services.[9]

The black banner at the top of Figure 1 identifies four phases in the MJS—incident processing, pre-trial/hearing, adjudication and sentencing, and post-trial/hearing—and the gray boxes represent specific steps within each phase.[10] When accused of a UCMJ violation, individuals from the military population enter the incident processing phase of the MJS. This is where reports are made (either to a military law enforcement organization or directly to a command) and investigations are conducted. At the end of that phase, commanding officers (COs) use their discretion to determine whether the case will proceed to the pre-trial/hearing phase and, if so, whether that next step will be on the disciplinary path or one of the judicial paths. In each phase

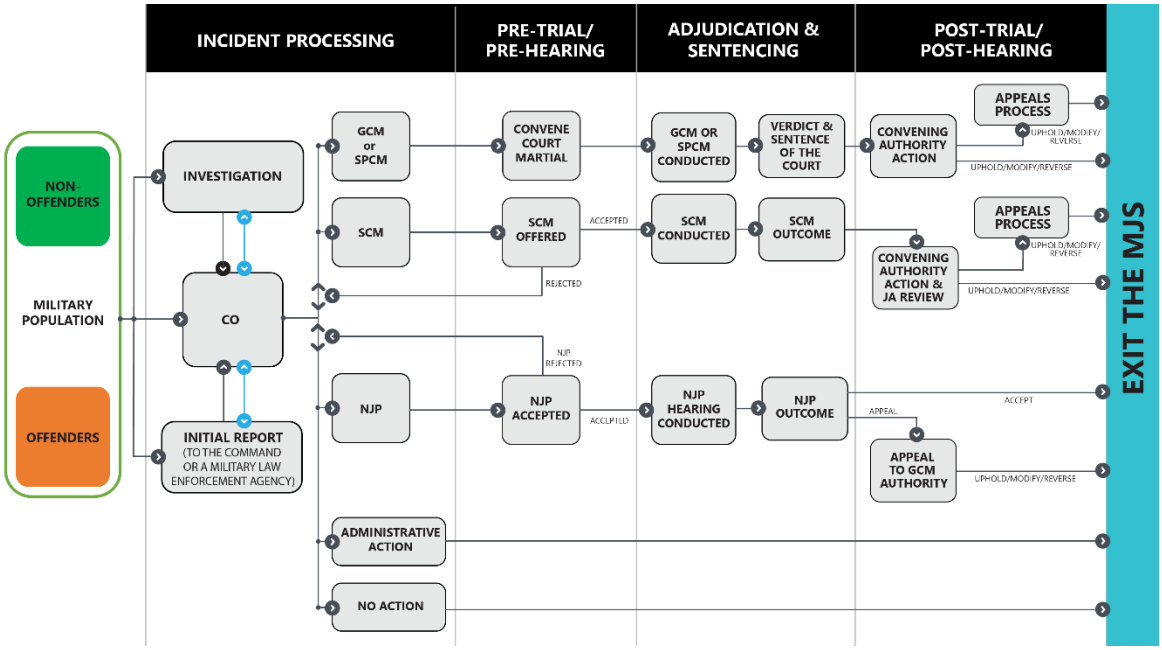
[8] In particular, we add to the 2019 GAO study [3], which drew few conclusions about the implications of its findings because they could not be used to prove unlawful discrimination.

[9] See the companion *How To* document [2] for more detailed descriptions of the chart components, and see references [8] and [9] for more information about the MJS itself.

[10] We did not include a correctional phase in our framework because it was not included in the 2019 GAO study [3] and not subsequently requested for this study.

on each path, there are some outcomes that send the case to the next step on the path and some outcomes that cause the case to move to a different path or to exit the system.

Figure 1. How a case flows through the MJS



Source: CNA, based on the 2019 MCM [8] and SME discussions.
Notes:

- Arrows: black indicates movement of the accused/case through the MJS; blue indicates information flow.
- Abbreviations: CO = commanding officer; NJP = nonjudicial punishment; SCM = summary court-martial; SPCM = special court-martial; GCM = general court-martial; JA = judge advocate.

Looking at the MJS in this way helped us identify:

- The different paths through the MJS—disciplinary and judicial
- The main outcomes on each path
- Points in the MJS where institutions and individual actors apply discretion
- Other relevant factors for each outcome

More broadly, characterizing the MJS as a series of outcomes that occur in ordered phases, with sequential steps in each phase, highlights the importance of considering the full range of outcomes because movement through the system is conditional on the outcome of each successive step along the relevant disciplinary or judicial path.

Main MJS outcomes by path and phase

Incident processing

The incident processing phase is where the MJS process begins. According to the MJS SMEs, the most common way incidents are reported is when someone within the chain of command informs a CO that one of his or her subordinates may have committed a UCMJ violation. This is especially true for disciplinary infractions and minor offenses. Serious criminal infractions might be reported to the commander by investigative and judicial entities outside the chain of command, such as civilian or military law enforcement agencies (LEAs) or military criminal investigative organizations (MCIOs).

Investigation

The CO has a responsibility to investigate each reported incident and can do so through a command investigation or by working with the relevant MCIO or other military LEA. For some offenses (e.g., sexual assault accusations), an MCIO must conduct a formal investigation. Generally, the CO has considerable discretion in deciding how incidents are initially investigated [8]. In addition to gathering all relevant information, the CO is likely to consult with his or her staff judge advocate (SJA) or other legal advisor to determine the strength of the evidence, appropriateness of preferring charges, and the appropriate disposition options based on the facts of the case.[11] At that point, the CO will make his or her disposition decision and the case will progress through the MJS.

Commander's disposition decision

The role of the CO is central to the MJS, and the CO's initial disposition decision is a point of considerable discretion. When making a disposition decision, the CO has several options:

- Take no action or dismiss preferred charges if the preliminary inquiry indicates that the accused is innocent, if there is insufficient or only inadmissible evidence, or if he or she believes there are other valid reasons not to proceed
- Take administrative action, which is considered to be corrective rather than punitive, and includes counseling, criticism, withholding of privileges, and involuntary separation

[11] Preferring charges is officially charging someone with a crime. According to the 2019 MCM [8], any person subject to the UCMJ may prefer charges. The person preferring the charges must sign them under oath and state that he or she has personal knowledge of, or has investigated, the matters set forth in the charges, and that the charges are true to his or her best knowledge and belief.

- Choose nonjudicial punishment (NJP) if he or she thinks that administrative measures are inadequate given the nature of the offense, the needs for good order and discipline, and/or the record of the accused
- Forward the decision to a superior authority if he or she does not have the authority to take what he or she believes is the appropriate action, or to a subordinate if the appropriate action can be handled at a lower level
- Refer preferred charges to court-martial (CM)—either summary (SCM), special (SPCM), or general (GCM) depending on the nature of the charge

According to the 2019 MCM [8], each commander in the chain of command has independent yet overlapping discretion to dispose of offenses within the limits of his or her authority. By policy, allegations of offenses should be disposed of at the lowest appropriate level. However, initial disposition authority for certain sex-related offenses is withheld from commanders who do not possess at least SPCM convening authority and who are not in the grade of O-6 or higher.

If charges are preferred, the disposition decision must be made by someone with the authority to administer NJP or convene CMs. These authorities are based on position rather than rank. The positions for officers with convening authority for GCM, SPCM, and SCM are listed in Articles 22, 23, and 24 of the UCMJ, respectively [8]. NJP authority is granted to any commissioned or warrant officer who has primary command authority over a military organization or area that is recognized as a command. Prior to referral of charges to GCM, an Article 32 hearing will take place if not waived.

Nonjudicial punishment

The NJP disciplinary option provides commanders with an "essential and prompt means of maintaining good order and discipline and to promote positive behavior changes in servicemembers without the stigma of a court-martial" [8]. The range of punishments available through NJP is narrower than that available through CMs and the maximum punishments are less severe. If the CO decides to pursue the NJP path, the accused is notified of that decision.

Once the disciplinary path is chosen, the case proceeds to the pre-hearing phase. In this phase, the accused may reject NJP proceedings, which would cause the case to revert back to the CO for a reconsideration of the disposition decision.[12] Taking no action and taking administrative

[12] This would not be the case if the vessel exemption is employed. For more on this UCMJ exemption, see https://www.militarytimes.com/opinion/commentary/2020/10/22/end-the-navys-vessel-exception-give-sailors-and-marines-the-due-process-afforded-to-every-other-us-service-member/.

action can be less severe consequences than the original decision to send the case through the NJP path[13]; thus, according to the MJS SMEs, the CO is more likely to initiate SPCM proceedings.

If the accused accepts the NJP decision, the case proceeds to the adjudication and sentencing phase and the NJP or Article 15 hearing is held. NJP hearings include discussions of evidence and other facts of the case. Accused members do not have legal counsel assigned for NJP hearings, but they can speak for themselves with the CO. After the NJP hearing, the case moves to the next phases. In the sentencing phase, the CO decides the outcome and any NJPs to be levied. In the post-hearing phase, the accused can appeal if he or she does not accept the outcome of the NJP hearing.

Of the four main paths, the NJP path is by far the most common. According to the services' Military Justice Annual Reports to Congress for FY 2020 [10], the number of cases where NJP was imposed ranged from 13 per 1,000 in the Air Force[14] to 43 per 1,000 in the Army. In contrast, the number of CMs tried was less than 1 per 1,000 for all three types of CM in all four DOD services covered in the FY 2020 reports.[15]

Summary court-martial

SCMs are used for the least severe offenses adjudicated by CM and are the least common of the three CM types. The SCM's function is to "promptly adjudicate minor offenses under a simple procedure" for enlisted personnel [8]. They have been described as a "non-criminal forum without a civilian analog" [9]. SCMs are led by commissioned officers who do not have to have extensive legal training, and the accused may hire a civilian attorney, but does not have a statutory right to representation by a military defense counsel. A "guilty" finding from an SCM does not result in a criminal conviction [8].

If an accused enlisted person rejects an NJP, the CO might refer him or her to an SCM, though the accused can also reject an SCM. In those cases, the CO would take a different action that could include no further action, administrative action, initiation of NJP proceedings, or, more likely, referring the case to SPCM for which the accused's consent is not required. If the SCM is accepted, the case proceeds through the remaining three MJS phases—pre-trial activities, adjudication and sentencing, and post-trial activities, which includes the possibility of appeal.

[13] This may not always be the case. For example, one available administrative action would be to initiate separation proceedings, perhaps seeking an other-than-honorable service characterization.

[14] The FY 2020 Air Force data did not include Space Force data.

[15] For a given FY, the rates per 1,000 are calculated by dividing the number of cases or CMs by the average endstrength and multiplying by 1,000.

Special and general courts-martial

SPCMs and GCMs differ in terms of the severity of the offenses they address, their composition (judges and panel members), and punishment options available upon a guilty finding:

- SPCMs handle intermediate-level offenses. They are composed of a military judge alone or at least four members and a judge. Enlisted personnel may ask that at least one-third of the members be enlisted. There is both a prosecutor and a defense counsel, and the accused may hire a civilian counsel or request a specific military counsel.
- GCMs handle the most serious crimes, equivalent to felonies in the civilian justice system. A GCM may consist of a military judge alone or a judge and at least eight members. The accused may elect trial by judge alone in all except capital cases and enlisted personnel may request at least one-third enlisted membership.

Otherwise, the general steps through which SPCMs and GCMs are conducted are very similar. Thus, we describe them together in this section.

Pre-trial phase

For both SPCM and GCM, there are multiple pre-trial activities, including convening the CM, detailing personnel to the CM, and determining any pre-trial confinements or restrictions. The CM convening authority details members and legal professionals to participate in the CM. Panel members must be those whom the convening authority believes are best qualified for the assignment. Any officer can serve as a court member; enlisted personnel can only serve if the accused is enlisted.

During the pre-trial phase, counsel is assigned. For both GCM and SPCM, the accused has the right to counsel. For GCM, both trial (prosecutor) and defense counsel must be members of the bar of a federal court or the highest court in a state and determined to be competent by the JAG. However, for SPCM, only the defense counsel must meet those credentials; the trial counsel can be any commissioned officer determined to be competent.

Additionally, during the pre-trial phase (and any time before CM findings are announced), the accused can enter into a plea agreement that could specify the charges referred or set sentencing limits.

Adjudication and sentencing phase

Once a GCM or SPCM commences, the military judge arraigns the accused and the charges are read. Next, the court members are selected. This process is like the civilian process of *voir dire* and potential court members can be challenged. Once the challenges are complete, the military judge randomly selects the required number from the remaining possible court members [9].

During the trial, each side presents its case and evidence. The trial concludes when all evidence has been presented and the judge has ruled on all questions of law. The conclusions of CMs are called "findings" (rather than "verdicts," as in civilian trials). In non-capital CMs with a military judge alone, that judge decides the findings and the sentence. In non-capital CMs involving court members and in capital CMs, three-fourths of the court members must agree to find the accused guilty, otherwise, the accused is acquitted. When the panel does reach a guilty finding, three-fourths of the panel must agree on sentencing. In capital cases, court members participate in sentencing and a unanimous guilty finding is required for a death sentence.[16]

The UCMJ and MCM define the minimum and maximum punishments that each type of CM can impose for each offense. SPCM and GCM can both result in punitive discharges. GCMs can impose bad-conduct and dishonorable discharges for enlisted personnel and dismissals for officers. SPCMs may not impose officer dismissals or dishonorable discharges, but most SPCMs may impose bad-conduct discharges[9]. Within these guidelines, the CM judge and members can award any authorized punishment, but they are instructed that the sentence should be "sufficient, but not greater than necessary, to promote justice and to maintain good order and discipline in the armed forces" [8]. This guidance and the range of possible punishments gives considerable discretion to those with authority to adjudge SPCM and GCM sentences.

Post-trial phase

Once the CM is complete, the findings and sentence are forwarded to the convening authority for action. Specifically, convening authorities may review CM findings and accompanying SJA recommendations and act to disapprove a finding or conviction, suspend all or part of a sentence, or reduce a sentence. Although not in effect for most of our data period, the MJA 2016 placed some restrictions on convening authorities' ability to act on findings in a way that diverges from the CM's output: the convening authority is no longer authorized to disapprove (or set aside) findings in which (i) the authorized maximum confinement exceeds two years; (ii) the sentence includes dismissal or a dishonorable or bad-conduct discharge, (iii) consecutive confinement is more than six months, or (iv) if the accused was convicted of one of several sexual offenses. Nor can the convening authority suspend a mandatory minimum sentence.

CM findings and sentences may also be reviewed by a service's court of criminal appeals. Automatic appellate review occurs if the CM sentence includes confinement for two years or

[16] Under reforms enacted in the FY22 NDAA, for cases in which all findings of guilty are for offenses that occurred after December 27, 2023, the sentence will be adjudicated by a military judge, who will be guided by presidentially prescribed sentencing parameters and criteria.

longer, a bad-conduct or dishonorable discharge, or a dismissal in the case of a commissioned officer, cadet, or midshipman. Appeal is mandatory if the sentence includes death.

Finally, if the CM result is not subject to automatic appellate review, the servicemember can ask that their case be reviewed by the JAG, who may modify or set aside the findings and sentence from a CM or forward the case for review by the court of criminal appeals. The accused also may petition the relevant court of criminal appeals for discretionary review.

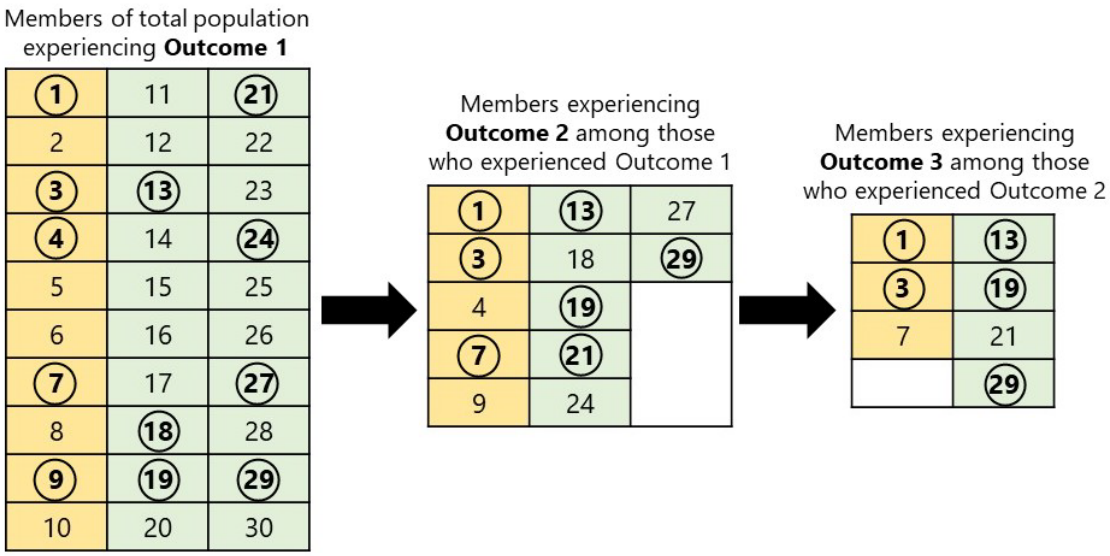
Conditional MJS outcomes

The framework not only identifies important MJS outcomes, but also the order in which they occur and the fact that movement to any given step is conditional on the outcome of the previous step. Understanding and capturing this conditionality has important implications for measuring and interpreting outcome disparities.

To demonstrate these implications, Figure 2 shows how members of two groups (yellow and green) in a hypothetical population move from one outcome to the next in a hypothetical system with three sequential steps. The box on the far left shows the size of the total population—30 people—and its yellow-green mix. The circled numbers in the box show how many members of the total population and of each group experience Outcome 1: 5 yellows and 7 greens for a total of 12. The middle box shows the new population (i.e., the 5 yellows and 7 greens who experienced Outcome 1), and the circles identify the 3 yellows and 4 greens who experience Outcome 2. Finally, the third box shows the population of yellows and greens who experienced Outcome 2 and the circles identify those who experience Outcome 3.

Presenting the outcomes this way provides a visual image of how the sizes and yellow-green mix of the relevant populations change as we move from outcome to outcome due to the conditional and sequential nature of the system. (This is like sampling without replacement in probability theory.)

Figure 2. Conditional movement from one outcome to the next for members of two groups in a hypothetical population and system



Source: CNA.
Note: Yellow and green identify two hypothetical populations. Circled numbers identify members of each population who experience the indicated outcome and are, therefore, eligible to experience the next outcome.

Next, the data in Table 1 show the conditional and unconditional rates at which members of the yellow and green groups experience each outcome. Specifically, the cells in the table show the rates at which members of each group experience each outcome, but the rates in each row are computed using different denominators. For example, the outcome rates in the first row use the initial population as the denominator—each group-specific rate is the number of yellow (green) people experiencing the indicated outcome divided by the number yellow (green) people in the initial population. Since these rates do not take into account how the population changes with each outcome, they are unconditional rates. The green-shaded cells on the table's diagonal, in contrast, contain conditional rates, where the numerators are the number who experience the indicated outcome and the denominators are the number who experienced the previous outcome.

Table 1. Conditional and unconditional outcome rates and disparity indexes by outcome and group

Rate denominator	Outcome 1	Outcome 2	Outcome 3
Initial population	Yellow rate = 5/10 = .50 Green rate = 7/20 = .35 Yellow-Green DI = 1.43	Yellow rate = 3/10 = .30 Green rate = 4/20 = .20 Yellow/Green DI = 1.5	Yellow rate = 2/10 = .20 Green rate = 3/20 = .15 Yellow/Green DI = 1.33
Experienced Outcome 1		Yellow rate = 3/5 = .60 Green rate = 4/7 = .57 Yellow/Green DI = 1.05	Yellow rate = 2/5 = .40 Green rate = 3/7 = .43 Yellow/Green DI = .93
Experienced Outcome 2			Yellow rate = 2/3 = .67 Green rate = 3/4 = .75 Yellow/Green DI = .89

Source: CNA.
Note: The yellow-green disproportionality index (DI) is equal to the yellow rate divided by the green rate.

The cells in Table 1 also contain yellow-green disproportionality indexes (DIs), which equal the rate at which yellows experience each outcome divided by the rate at which greens experience each outcome. A DI greater than one indicates a positive disparity—yellows experience the outcome at a higher rate than greens; a DI less than one indicates a negative disparity—yellows experience the outcome at a lower rate than greens. A DI equal to one indicates no disparity—the two groups experience the outcome at the same rate.

These hypothetical data show two important things. First, unconditional and conditional rates can tell very different disparity stories. This is shown in the column for Outcome 3. The *unconditional* outcome rates (i.e., those with the initial population as the denominator) generate a DI of 1.33, thus indicating a positive disparity for the yellow group. In contrast, the *conditional* outcome rates (i.e., those with the Outcome 2 population as the denominator) generate a DI of 0.89, thus indicating a negative disparity. Second, the DIs based on conditional rates along the table's diagonal pinpoint where in the system the positive disparities occur—it is primarily at Outcome 1 and only slightly at Outcome 2.

This hypothetical population and sequential system are generally analogous to the military population and the MJS, and the hypothetical DIs demonstrate that accurately identifying where disparities occur in the MJS requires being able to analyze each outcome while *conditioning on what happened in the previous outcome*. For example, think of the initial population in Figure 2 as the enlisted population of a military service, then think of: Outcome 1 as being accused of a criminal violation of the UCMJ, Outcome 2 as being investigated by the service's MCIO in response to that accusation, and Outcome 3 as being referred to CM based on

the investigation's results. With this new interpretation of what the data in Table 1 represent, we see that the biggest yellow-green outcome disparity is associated with the initial accusation; conditional on being accused, members of the yellow group are only slightly more likely to be investigated and, conditional on being investigated, members of the yellow group are less likely to be referred to CM. Based on these hypothetical data, it would make sense for the service's leaders to focus on understanding why members of the yellow group are more likely to be accused and equally likely to be investigated by the MCIO, but less likely to be referred to CM. This disparity pattern suggests that accusations against yellows are less likely than accusations against greens to be validated by an investigation that generates enough evidence to support a CM referral.

Individual and institutional discretion in the MJS

By identifying the main outcomes at each MJS phase and along each MJS path, the framework also helps identify points in the system where institutional and individual discretion play prominent roles. It is at these points where bias may enter the system and create outcome disparities. Such bias could be based on REG, or it could be simple favoritism. It could also be implicit or explicit.[17] With this in mind, it is also important to consider the rules that guide MJS decision-makers and, thus, create the boundaries on their discretion. This allows us to understand how discretion may enter the system.

Where discretion enters the MJS

The most individual discretion exists during the incident processing phase: with only a few restrictions, COs decide whether and how to investigate, may determine what charges to prefer, and choose whether to address the charges with nonjudicial processes or to refer them to CM. If charges are referred, it must be done with some legal review and by an officer with convening authority.

Substantial CO discretion also exists during both the pre-hearing and adjudication and sentencing phases along the NJP disciplinary path and the SCM judicial path. In both cases, COs with little or no legal training decide whether the accused is guilty and, if so, what punishments

[17] See the companion document (reference [2]) for discussions of institutional and individual bias and discretion, as well as the differences between implicit and explicit bias.

to apply. Although accused servicemembers can reject both NJP[18] and SCM, if they accept, they do not have a right to legal counsel—they may speak for themselves at an Article 15 hearing and may hire their own legal counsel for defense at SCM [8]. Servicemembers may also appeal both NJP and SCM outcomes.

Once a case is referred to SPCM or GCM, discretion is spread across more people and those people are more likely to be legal professionals. During the pre-trial phase, the convening authority makes decisions about pre-trial confinement and identifies the other individuals who will exercise discretion during both the pre-trial and adjudication and sentencing phases. These individuals include the military judge, the trial and defense counsels, and the court members. They will contribute to decisions about plea agreements in the pre-trial phase and about CM findings and sentences in the adjudication and sentencing phase.

Finally, in the post-trial phase, discretion is exercised by convening authorities and service JAGs. While the MJA 2016 limited the convening authority's power, he or she can still alter the findings and/or sentences for some CM cases.

How discretion enters the MJS

As described above, NJP, SCM, SPCM, and GCM all handle increasingly more serious UCMJ violations, from minor disciplinary infractions to criminal offenses. Thus, many of the rules that govern decisions at different points in the MJS are related to the nature of the offense that has been committed or alleged.

In some cases, the rules are specific and not open to interpretation. For example, as described in the 2019 GAO report [3], some drug and sex offenses trigger mandatory investigations. For drugs, if the offense is identified as the result of a random urinalysis test, an investigation must occur. Similarly, all allegations of adult sexual assault must be reported to the service's MCIO, and the MCIO must conduct an investigation if it has jurisdiction. Given that these investigations are mandatory, they may be less likely to result from individual-level bias.[19]

In other cases, the rules may be less clear and more open to interpretation. For example, the 2019 MCM indicates that a servicemember may violate Article 134, *General article*, by committing a breach of custom of the service. It then provides the following legal definition of breach of custom: "Custom arises out of long-established practices which by common usage have attained the force of law in the military or other community affected by them" [8]. The MCM goes on to stipulate that "a custom which has not been adopted by existing statute or

[18] Unless the vessel exemption is employed.

[19] According to the GAO, service officials suggested this interpretation [3].

regulation ceases to exist when its observance has been generally abandoned" [8]. This raises the questions of who determines that a custom has been generally abandoned and whether this happens uniformly across a service.

Violations of Article 134 based on breach of custom also introduce the role of institutional discretion in terms of what is recognized as established custom. Institutional discretion also enters via Article 92, *Failure to obey order or regulation*. Based on this punitive article, outcome disparities may arise from regulations set at the service level, rather than from any procedures or practices within the MJS itself.

Relevant other factors

Application of the multivariate analytical techniques described in the companion *How To* document [2] requires controlling for factors other than REG that are likely to determine MJS outcomes. Based on the guiding framework and what we thought would be captured in the MJS data systems, we identified factors in three categories:

- ***Information about the accused:*** These factors capture other personal or career characteristics that may determine MJS outcomes via their effects on violation rates, judgements of MJS decision-makers, and/or prevailing service subcultures. They include marital and parental status, prior MJS involvement, and military occupation.
- ***Information about the incident:*** There are two reasons to include factors that characterize the incident. First, as described above, the amount and type of discretion varies by offense type. Second, when modeling MJS outcomes, it is also important to include characteristics of each case to ensure that one is, to the extent possible, comparing like cases to like cases. Thus, in addition to offense type, other incident-related factors include whether there was a victim and whether the offender used weapons, drugs, or alcohol during its commission.
- ***Information about the MJS process:*** Factors in this category control for different elements of discretion. They include variables indicating the type of investigation on which an initial disposition is based and demographic characteristics of MJS decision-makers.

Approach: Data Collection and Assessment

An important and time-consuming part of this study was collecting all the relevant data from each service. Here we describe that process, as well as our approach to assessing the data based on the project's research questions: Did the available data support the analytical requirements developed in the *How To* document [2], and were they consistent across services?

The MJS data collection process

All five services included in the study maintain administrative data to manage their MJS processes. As shown in Table 2, these data are kept in multiple data systems within each service. As a result, gathering all the required data for this project was a complicated process that required cooperation and collaboration across multiple organizations.

Data sharing for the study was done via a memorandum of understanding (MOU) that set the terms and conditions under which the Office of the Secretary of Defense (OSD) provided service-specific investigations and military justice data to CNA. Throughout the process, the Office for Diversity, Equity, and Inclusion (ODEI) acted as the main representative for OSD. Based on the responsibilities defined in the MOU, ODEI, the service data providers, the Defense Manpower Data Center (DMDC), and CNA completed the steps listed below.

- OSD/ODEI:
  - Transmitted data requests to the services using templates supplied by CNA and provided the services with documentation required to satisfy the requests
  - Received data files from the services and securely transmitted them to DMDC where personal identifiers (e.g., social security numbers (SSNs) or electronic data interchange personal identifiers (EDIPIs)) were replaced with CNA-unique identifiers (IDs) to enable record matching with DMDC personnel data
  - Initiated all data requests, but CNA was authorized to query the data providers when questions arose

Table 2. Data systems for investigations and disciplinary and judicial processes

Function	USAF	USA	USMC	USN	USCG
Investigations					
MCIO	Investigative Information Management System (I2MS)	Army Law Enforcement Reporting and Tracking System (ALERTS)	Consolidated Law Enforcement Operations Center (CLEOC)		Field Activity Tracking System (FACTS)
Other LEA	Air Force Justice Information System (AFJIS)		-N/A-		-N/A-
Disciplinary & judicial processes					
NJP	Automated Military Justice Analysis and Management System (AMJAMS)	Military Justice Online (MJO)	Total Force Data Warehouse (TFDW) Legal Action D66 NJP	Quarterly Criminal Activity Report (QCAR)	Human Capital Production (HCPRD)
SCM, SPCM, & GCM		Army Courts-Martial Information System (ACMIS)	Wolverine / Case Management System-Judge Advocate Division (CMS-JA)		Law Manager / Wolverine

Source: CNA based on information and data provided by the services.

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- The services' data providers:
  - Sent to ODEI individual-level records that contained personal IDs
  - Responded to queries from CNA researchers concerning the data provided to ODEI
- CNA:
  - Prepared a detailed description of the service-level data needed to satisfy the data requirements
  - Sent ODEI templates and instructions to implement the data requests

In general, the services' data providers were helpful and responsive, but the process is not designed to be quick or casual. To protect individual information, CNA research teams must be granted several levels of permission before they are authorized to receive individual-level data from the services. In addition, several of the data systems were being redesigned, which meant that some data were inaccessible.[20]

The MJS data request

The data request was defined by two basic parameters. The first was the timeframe: FY 2013 to FY 2021 to capture both the period studied by the GAO and outcomes that have occurred in the intervening years. For investigations, we requested information on completed cases that were opened during the specified timeframe. For disciplinary and judicial processes, we requested cases for which charges were preferred during the relevant timeframe but did not stipulate that the cases must be closed. The second parameter was the population. We asked for cases or incidents in which the accused offender was an active duty enlisted member or commissioned officer, though we ultimately focused on enlisted personnel only for the reasons described in the introduction to this report.

Given these parameters, we then provided a list of specifically requested data elements. The same list was given to all the providers, regardless of their functions. Thus, in phone calls and other communications, we asked each provider to submit any of the requested elements they collect, as well as any others they thought would be useful based on their knowledge of the MJS and their own data systems.

[20] The data collection process began in mid-September 2021 and the services made their initial submissions to ODEI from October through December 2021. Transfers from ODEI to DMDC occurred from November 2021 through January 2022 and DMDC began the reidentification process in January. Several files had issues with the individual IDs when initially sent to DMDC and it took some time and work to resolve them. CNA was authorized to receive the data in mid-December 2021 and began receiving reidentified files in the last week of January 2022. We received the last fully reidentified file on April 25, 2022.

Two variables on the list were critical to the analysis: individual IDs to allow us to merge the MJS data with DMDC personnel data and case IDs to allow us to account for the fact that some individuals are associated with more than one case and some cases involve more than one individual. The other data elements on the list relate to the three categories of control factors and the outcomes in each MJS phase that were identified by the guiding framework. They are listed in Table 34 and Table 35, respectively, in Appendix A.

DMDC personnel data

Although our data request included information about accused offenders, we chose to use DMDC data for these control factors for several reasons.

First, we wanted to maximize cross-service consistency for all the control variables, but especially for REG. Our data period overlaps the period studied by the GAO, and we knew from the 2019 report that the REG information in the MJS data systems for those years were inconsistent and incomplete, both within and across services [3]. In addition, although the services have begun to collect REG data in the required formats,[21] we do not know how the REG information is being captured in each MJS dataset. Specifically, it is not clear who is filling out the REG fields or on what basis. For example, is it based on the MJS official's own judgement or on self-identification by the accused? The DMDC REG data, in contrast, reflect what is in the official personnel data. Furthermore, using the DMDC data ensures that the REG distributions of the MJS outcomes we study are based on the same information as the REG distributions of active duty personnel to which they are being compared.[22]

Second, compared to the MJS data, the DMDC personnel data include a broader range of potential control factors in standard formats. For example, the DMDC data include information about marital and parental status, waivers required at initial enlistment, and occupation codes that are standard across services.

Finally, using DMDC data facilitated both data collection and data processing. For the former, the complexity of the initial data request was significantly reduced—we did not have to pre-specify all the information we might need. For the latter, the time required for data cleaning

[21] The required formats were specified by the Office of Management and Budget in 1997 [11] and established for the MJS datasets specifically in 2018 with *the Uniform Standards and Criteria Required by Article 140a, Uniform Code of Military Justice* [12] following the MJA 2016.

[22] Having a common source with consistent standards for identifying REG is also an issue for studying racial bias in the civilian justice system [13]. The fact that the services have one authoritative data source for the REG distributions of both the base population and accused offenders substantially improves their ability (relative to civilian agencies) to do analysis on this topic.

was reduced because we were able to work with one common personnel data source rather than five unique sources.

The DMDC personnel data used for the study were provided in two files containing different types of information:

- Active Duty Master File (ADMF)—individual enlisted and officer active duty servicemember personnel records, containing demographic and unit information
- Military Entrance Processing Command (MEPCOM) File—individual records of those processed and examined at Military Entrance Processing Stations (MEPS), including demographic and waiver information

Assessment criteria

Our approach to assessing the services' MJS data started with the assumption that the broader data collection effort is not about data collection per se, but about collecting and storing the data so that they are usable for analysis within the resource and time constraints faced by DOD, DHS, and the services. With this as a starting point, we considered the following factors.

The services' resource and time constraints are real and significant. In general, the services do not have the human or fiscal resources to spend significant amounts of time cleaning data to make it usable for analysis. In addition, they get many short-suspense requests to which it is very difficult to respond if the data are incomplete, inconsistent, or in a software system that is not designed to allow the extraction of data in formats that support quantitative analysis.

Another factor is military rotation. Given a typical three-year rotation schedule, it is important to ensure that data systems used by military personnel do not require high and steep learning curves to achieve competency. Whether the job is data entry at the front end or data use at the back end, the systems need to be easily mastered and standardized across commands within each service to ensure that the data they store are consistent and that military members can use them appropriately regardless of their assignment location.

It is also important to remember that the MJS data systems are intended to support efficient management of investigative, disciplinary, and judicial operations as well as fulfill multiple data reporting requirements; they are not primarily intended to address MJS bias issues.

With these factors in mind, we treated our data request as a routine exercise to determine the services' abilities to respond to quick data calls requested by leadership and in support of analysis by external organizations. Our assessment is, thus, an assessment of the data that were submitted, not of the underlying source data systems. We considered two basic questions:

1. Were the provided data "readily usable"?
2. Did the data extracts include the requested variables if they were within the purview of the specified system?

To answer the first question, we evaluated usability based on:

- Completeness
  - Individual IDs to allow merging with DMDC data
  - Case IDs to allow accounting for individuals associated with more than one case and cases involving more than one individual
- Consistency across data sources ***within*** the same service
  - Case IDs that allow merging across the life of a case—from initial reporting to investigation and disposition to final adjudication and sentencing to review and appeal
  - Consistent variable names, structures, and values
- Structure within a given data source
  - Variable structures that support quantitative analysis, e.g., categorical variables rather than narrative text and complete specification to distinguish between missing entries and options that are not available/applicable for a given record
  - Structures that support data quality, e.g., values based on dropdown menus rather than hand entry

To answer the second question, we compared what was provided to what was requested, focusing primarily on the data elements associated with MJS outcomes and the incident- and MJS-related control factors that would not come from DMDC.

Approach: Disparity Measurement and Interpretation

In this section, we describe how we applied the guiding framework to analyze the MJS administrative data provided for this study: we describe the methods we used to measure outcome disparities and the criteria we applied to evaluate the measured disparities and decide whether they are meaningful from a policy perspective.

Method for measuring disparities

The objective of this effort is to measure REG outcome disparities that isolate the effects of REG from the effects of as many relevant other factors as the data allow. To do this, we use logistic regression to model the relationships between each observable outcome, REG, and the identified other factors. Logistic regression estimates the log odds of a given outcome as a linear function of the covariates. Thus, the dependent variable is the probability that the outcome of interest will occur, conditional on the REG and other factor variables, and the predicted outcome value is bounded between zero and one.

We present the estimation results as odds ratios (ORs), which represent the odds that the outcome will occur for a given variable value, compared to the odds that it will occur given a different variable value, *holding the other factors constant*.[23] More specifically, we calculate the ORs so that they represent the odds of the outcome occurring for:

- Black and other race relative to White
- Hispanic relative to non-Hispanic
- Female relative to male

ORs are like (but not the same as) the DIs described in the previous section and, in the MJS context, they have a similar interpretation:

- OR = 1 indicates that there is no statistical association between REG and the MJS outcome of interest. This result is interpreted as ***no disparity***—holding other factors constant, there is no difference in the odds that an outcome will occur based on REG.

[23] Odds are not the same as probabilities, but they are calculated using probabilities: odds are defined as the probability that an outcome will occur divided by the probability that it will not occur.

- OR > 1 indicates a positive association between REG and the MJS outcome of interest. This result is interpreted as a ***positive disparity***—holding other factors constant, the odds that an outcome will occur are higher for the specified REG group than for the comparison group.
- OR < 1 indicates a negative association. This result is interpreted as a ***negative disparity***—holding other factors constant, the odds that an outcome will occur are lower for the specified REG group than for the comparison group.

The greater the distance between 1 and the value of the estimated OR, the stronger the association—either positive or negative—between REG and the outcome, and the greater the difference in the estimated odds that the two groups will experience it.

Given the tasking for this study, we are interested in identifying outcomes with positive disparities as indicators of potential negative bias toward the REG groups of interest. Given the inherent unobservability of both bias and population violation rates, however, it is not possible to determine whether regression-adjusted disparities are the result of bias or REG differences in behavior, but they do allow us to take the other included factors off the table.[24]

Criteria for evaluating disparities

Disparity metrics can be evaluated in terms of absolute size, statistical significance, and impact. There is no legally or scientifically agreed upon level at which any of these criteria allow us to conclude that a disparity signals bias or unlawful discrimination. Therefore, we consider multiple criteria to identify which parts of the MJS should be changed or further studied to ensure that MJS policies and practices do not lead to REG outcome disparities and that MJS actors apply their discretion appropriately.

The most impactful disparities

Our first criterion is impact. We define the most impactful disparities as those that affect the greatest numbers of servicemembers. We did not explicitly calculate impact for any outcome, but the choice to focus on enlisted personnel only is consistent with this criterion. We also note that disparities associated with NJPs are likely to affect more servicemembers than those associated with CMs simply because so many more servicemembers are affected by NJP each year. Data submitted to Congress in the services' annual reports on military justice indicate

[24] The companion *How To* document (reference [2]) explains the analytical problems created by the facts that neither bias nor population violation rates can be directly observed in administrative data.

that, on average over the course of our study period (i.e., FY 2013 to FY 2021), 8 times (USAF) to 31 times (USA and USN) more servicemembers were affected by NJP than CM.[25]

The largest positive disparities

Having addressed impact, our next criterion is disparity type and size based on the estimated ORs. To identify outcomes with the largest positive disparities, we created five disparity categories based on the range of estimated OR values relative to 1.00:

- Small disparities or no significant disparity = statistically insignificant[26] ORs and ORs with values greater than or equal to 0.90 and less than or equal to 1.10
- Mid-sized positive disparities = statistically significant ORs with values greater than 1.10, but less than or equal to 1.50
- Large positive disparities = statistically significant ORs with values greater than 1.5
- Mid-sized negative disparities = statistically significant ORs with values greater than or equal to 0.50, but less than 0.90
- Large negative disparities = statistically significant ORs with values less than 0.50

For each REG group and each service, we also ranked the outcomes according to OR size, and identified the five largest positive disparities.

Disparities at specific points in the MJS

With the disparities for each outcome measured and categorized, we moved to comparing disparities that occur at different points in the MJS. This not only helps to identify where DOD and MILDEP leaders should place their attention, but also gives clues about the potential causes of the disparities. For example, in their 2019 study, the GAO found significant positive Black and Hispanic disparities for being tried by CM, but no significant disparities for being found guilty conditional on being tried [3]. Combined, these findings have two implications. The first is general. If bias is a cause for disparities in MJS outcomes, it is more likely to be present in the incident processing and pre-trial phases of the system than in the adjudication phase. The second is specific. The cases being brought against Black and Hispanic servicemembers may have been weaker than the cases brought against White and non-Hispanic servicemembers, respectively. Thus, we note that this criterion is most effectively applied using conditional disparities defined as precisely as possible.

[25] Recent reports can be found at https://jsc.defense.gov/Annual-Reports/ and older reports can be found at https://www.armfor.uscourts.gov/ann_reports.htm. The 2013, 2020, and 2021 reports are references [10, 14-15].

[26] In the service-specific results sections, we identify ORs that are statistically significant at the 1, 5, and 10 percent levels. ORs that do not meet the 10 percent threshold are considered insignificant.

Disparities for high-discretion versus low-discretion outcomes

Finally, we also compared disparities for outcomes that we have identified as involving relatively high and relatively low amounts of discretion. Based on the guiding framework and the data we received, we defined high- and low-discretion outcomes in three areas.

Offense type

Following the GAO approach, we consider outcomes associated with drug- and sex-related offenses to be relatively low discretion. In contrast, we consider other offenses, especially minor military offenses, to be relatively high discretion. This is partially because COs have more discretion when investigating and disposing of these cases, and partly because what is considered a military offense is defined institutionally.

Investigation type

In their 2019 study, the GAO found that, in all four of the DOD services examined, a recorded investigation decreased the size and statistical significance of Black-White disparities for being tried by SPCM or GCM [3]. This suggests that the investigation phase of the MJS merits further study and points to command investigations (which are less likely to be recorded) as potential sources of disparities.

Based on this GAO finding, we considered outcomes associated with MCIO and other LEA investigations to be relatively low-discretion outcomes and those associated with command investigations to be relatively high-discretion outcomes.

MJS forum

COs have substantial individual discretion when making an initial decision to dispose of a case by NJP or SCM. They also have substantial discretion during all phases on these two paths through the MJS. In contrast, more oversight and guidance are required to refer a case to SPCM or GCM and there are more people involved and more legal structures associated with the remaining phases along these two paths through the system. Therefore, we consider NJP and SCM outcomes to be relatively high-discretion outcomes, and SPCM and GCM to be relatively low-discretion outcomes. Note that there is significant overlap between high-/low-discretion offenses and high-/low-discretion MJS forums.

Other judgements

Even with these carefully measured and systematically evaluated disparities in hand, decision-makers in DOD, DHS, and the MILDEPS will still have to make judgements about their meaning and how to act on them. The best way to demonstrate this is to consider how we typically interpret results for gender compared to how we typically interpret results for race and ethnicity.

In both civilian and military populations, data show that men are more likely than women to be involved in the justice system. This is generally—and quite comfortably—interpreted as a reflection of the accepted idea that men commit violations at higher rates than women. It is not typically interpreted as evidence of bias against men in either justice system. In contrast, when data show that Black, Hispanic, and other people of color are more likely than White, non-Hispanic people to be involved in the justice system, the interpretation is much more open to debate. This is because of all the social and other factors that affect both criminal behavior and decisions made by justice system actors.

We cannot resolve this tension in this study, but it must be considered when using the study's results.

Approach: Common Data Features for All Services

Moving from the conceptual to the concrete, this section describes features of the study data that are common across all services. Specifically, the section (i) describes the actions we took to create the analytical samples by merging the MJS data we received with the personnel data from DMDC, (ii) identifies and defines the variables that have the same structures and definitions for all the services, and (iii) explains the specifications of the multivariate models we estimate and how we report the results.

Unit of observation and final analytical samples

The MJS files include both an individual ID and some type of case ID. Because individuals can be involved in multiple cases and cases can include multiple offenders, we use both types of ID to create unique individual-case (I-C) records as the unit of observation in each analytical sample. In addition, to avoid double-counting people who have multiple CMs or NJPs within the same FY, we defined the sample using each individual's first observation in each FY, then created separate variables to indicate whether an individual has multiple CMs and NJPs in each FY.[27]

MJS-DMDC merges to create combined analytical samples

The MJS-DMDC merges were done using individual IDs and case-related dates. First, the individual IDs from the MJS data were matched to the individual IDs in the ADMF. Next, the case-related dates (which varied by MJS extract) were matched to a corresponding ADMF FY quarter. This step was necessary to ensure that the analytical samples contained the right values for time-variant characteristics, such as age, paygrade, and marital and parental status.

[27] For an intuitive understanding of this step, note that the logistic regression models are estimated by FY and the implicit question is, "Did this individual experience this outcome in this FY?" The answer is the same regardless of times the individual experienced the outcome that year, but including all instances in the model would skew the estimated probabilities associated with REG.

In many of the files, substantial numbers of records had missing values for key dates in FY 2013 and FY 2021. To account for this, we narrowed the analytical timeframe to FY 2014 to 2020. In the last step of the merge, we selected records for regular, active duty enlisted personnel from the right service based on the ADMF data.

Using this process, the following records were dropped from the MJS extracts:

- Records with missing individual IDs
- Records with no usable dates and all records for FY 2013 and FY 2021
- Records with individual IDs and dates but no ADMF match
- Officer records as defined by the paygrade on the ADMF match
- Records for individuals whom the ADMF identifies as being from a different service, the reserve component, or the national guard

Common MJS outcome variables

The construction and specific definitions of the MJS outcome variables differ across MJS data extracts based on the specific data elements provided. To make the analysis as consistent as possible across services, we used the guiding framework to categorize and order the analyzed outcomes in the following way:

- Incident processing phase
  - Investigation outcomes
- NJP disciplinary path
  - Subject to NJP proceedings
  - NJP findings
  - NJPs imposed
  - NJP appeal
- CM judicial path
  - Case referred to CM overall and by CM type
  - Case tried at CM
  - CM findings
  - CM punishments imposed
  - CM appeal

Within this construct, there were only a few common definitions across services. The first was that, in all the CM samples, indicators for SPCM include all SPCMs—SPCMs conducted by a

military judge alone and those authorized to impose a bad-conduct discharge. This was done to create sample sizes large enough for statistical analysis.

The others related to punishment type. Most of the I-C records in the MJS data extracts had multiple offenses/specifications and multiple associated punishments. The data were not, however, structured so that we could match the punishments to the offenses. Therefore, we created variables to indicate whether a particular punishment was included in a given I-C record. The punishment types for NJP and CM are as follows:

- NJP punishments
  - Admonition or reprimand
  - Forfeiture of pay
  - Reduction in grade
  - Restriction
  - Arrest in quarters
  - Correctional custody
  - Confinement
  - Extra duties
- CM punishments:
  - Reprimand
  - Forfeiture of pay and allowances
  - Fine
  - Reduction in grade
  - Restriction to specified limits
  - Confinement
  - Hard labor without confinement
  - Punitive separation
  - Death

Common MJS control factors

We created three types of common control factors using the MJS data: offense types, punishments, and prior MJS history.

Offense types

Information on offenses in the MJS data was generally defined by codes based on the punitive articles of the UCMJ plus additional federal criminal codes from the United States Code (USC). To make these variables usable in the logistic models, we created four categories of offense types:

- Drug-related offenses based on offense codes associated with Article 112a and with USC Title 21
- Sex-related offenses based on codes associated with current Articles 120a-d
- Other civilian offenses based on codes associated with various USC titles and UCMJ punitive articles that map to offense codes in the National Incident-Based Reporting System (NIBRS), which captures information on civilian crimes that must be reported to DOJ

- Military-specific offenses based on remaining codes that reflect offenses that would not be considered crimes according to civilian law (e.g., malingering, gambling, and adultery)

Prior MJS history

Prior MJS history is defined as having a prior NJP or CM in the provided MJS data. The prior NJP indicator was created by identifying each servicemember's earliest NJP date. If that date comes before a given CM record in the MJS data, the servicemember had an NJP prior to that court-martial. The prior CM indicator was defined using various date variables to determine whether an individual can be observed as having a previous CM on record. Construction of these variables incorporated the FY 2013 records that were not included in the main analysis.

Common DMDC control factors

The DMDC control factors came from the ADMF and the MEPCOM file. The MEPCOM variables capture characteristics of all enlisted personnel and accused offenders at the time of entering each service. They are the following:

- **Home of record (HOR).** A categorical variable based on the individual's home state of record. There are four categories corresponding to US Census regions—Northeast, Midwest, South, and West—plus two additional overseas categories—territories and foreign/other/unknown.
- **Waiver status.** An indicator variable that is equal to 1 if the individual had a particular enlistment waiver at accession and 0 if not. The MEPCOM file captures enlistment waivers for dependents, bad conduct, drugs, and medical issues.

The ADMF variables capture characteristics of the accused offenders at the time the offense or case occurred. We defined seven factors related to personal characteristics:

- **Race.** A categorical variable with four options: Black, White, other (i.e., Asian, American Indian/Alaska Native, Native Hawaiian or Other Pacific Islander, multiple races, other), and unknown.
- **Ethnicity.** A categorical variable with three options: Hispanic, non-Hispanic, and unknown.
- **Gender:** A categorical variable with three options: female, male, and unknown.
- **Marital status.** A categorical variable with three options: never married, married, and formerly married, which includes annulled, divorced, interlocutory decree, separated, and widowed.

- **Parental status.** An indicator variable equal to 1 for servicemembers whose records indicate that they had children at the relevant time and 0 for those whose records indicated that they did not or if the parental status is unknown.
- **Education level.** A categorical variable based on the various DMDC education codes. We defined three education categories: high school (HS) or below, more than HS, and unknown, which includes records with missing values.

There are also four military career-related factors:

- **Paygrade/rank.** A categorical variable indicating enlisted paygrade bands. For all services except the USMC, we defined three paygrade categories: junior enlisted (E-1 through E-4), non-commissioned officers (NCOs) (E-5 and E-6), and senior NCOs (E-7 through E-9). For the USMC, we defined four paygrade categories: non-NCO (E-1 through E-3), NCO (E-4 and E-5), staff NCO (SNCO) (E-6 and E-7), and senior SNCO (E-8 and E-9).
- **Over age for paygrade.** An indicator variable equal to 1 if the individual is more than two standard deviations older than the mean age for his or her paygrade and 0 if not. This variable is designed to account for the correlation between age and paygrade.
- **Primary DOD occupation.** A categorical variable indicating one of 27 DOD occupations based on the first two digits of the DMDC primary DOD occupation code.
- **Accused offender unit identification code (UIC).** A categorical variable indicating the location of the servicemember's unit. There are four categories corresponding to US Census regions—Northeast, Midwest, South, and West—plus three additional categories—territories, foreign, and other/unknown.

Multivariate outcome models

With the analytical samples created and the outcome and control variables defined, the next step is estimating the multivariate outcome models. Because the models were estimated on different subsamples of the data, it is necessary to explain how those subsamples were defined and the implications of those definitions for model specification.

Subsamples based on outcome types

To appropriately model conditional outcomes, it is necessary to carefully define the relevant comparison population, which, in turn, determines the appropriate estimation sample. In general, we modeled two types of outcomes. The first type is unconditional first-observed outcomes. These are the first, or earliest, MJS outcomes we observe in each MJS dataset, and they follow from the parameters that defined being included in the dataset. They are

considered unconditional because the appropriate comparison population is all regular, active duty enlisted personnel in the ADMF in the relevant FY quarter.

The second type of outcome is conditional MJS outcomes. These are any outcome that occurs after the first-observed outcome. They are conditional because the comparison populations come from the MJS datasets, rather than the ADMF, and they are based on the samples of individuals who experienced the previous outcome. For example, consider a dataset in which we observe the following outcomes:

- Unconditional first-observed outcome: referred to CM
- First conditional MJS outcome: tried by CM
- Second conditional MJS outcome: found guilty at CM

For this dataset, the logistic regression model for the likelihood of being referred to CM is estimated on the ADMF sample of all regular, active duty enlisted personnel. The model for the likelihood of being tried by CM is estimated on the sample that includes everyone in the MJS dataset. The model for found guilty at CM is estimated on the sample of accused offenders who were tried by CM.

Model specifications

The different specifications for unconditional and conditional outcome models are summarized in Table 3.

Table 3. Control factors included in logistic models of unconditional and conditional MJS outcomes

Unconditional, first-observed outcomes	Conditional MJS outcomes
REG indicators	REG indicators
Fiscal year indicators	Fiscal year indicators
Marital and parental status indicators	Marital and parental status indicators
HOR	HOR
Education level	Education level
UIC location	UIC location
Paygrade band and over age status	Paygrade band and over age status
DOD occupation	DOD occupation
Enlistment waiver indicator	Enlistment waiver indicator
Prior CM or NJP indicators	Prior CM or NJP indicators
	Offense type indicators
	Offense counts

Source: CNA.

For each service, we estimated multiple models to capture the different outcomes in each successive MJS phase and to capture different elements of discretion. When possible, the unconditional first-observed NJP and CM outcomes were modeled in total and by offense type. The conditional MJS outcomes, in contrast, use the offense types and offense counts as control factors, along with all the other factors included in the first-outcome models. In addition, guilty outcomes were modeled by punishment type.

Reporting estimation results

With multiple outcomes for each service, we estimated a total of 107 logistic regression models. It is not practical to include full estimation results for all the models in this document, so we took a strategic approach to reporting the results.

In the service-specific results sections, we report the estimated ORs for all the service's observable outcomes by REG group: Black, Hispanic, and female. These are the primary disparity measures and the main empirical results for this report. They capture the REG disparities that exist after controlling for the other factors.

In Appendix B, we report information to summarize the impact of using the control factors to generate the regression-adjusted disparities. As explained in the *How To* document [2], unadjusted disparities (i.e., disparities that do not control for other factors) may ***overestimate or underestimate*** true disparities depending on the correlations between the outcome, REG, and unconsidered other factors. Thus, controlling for other factors may yield adjusted disparity measures that are ***less than or greater than*** unadjusted measures. The information in Appendix B identifies instances in which both effects occurred. It is for this reason that we recommend against using unadjusted disparities as triggers for detailed analyses and, instead, recommend conducting both simple and detailed analyses on a regular basis.[28]

[28] See the *How To* document [2] for a more detailed discussion of this topic.

Analysis and Results: Air Force

This section describes the data, analysis, and results for the USAF. It also includes our interpretations of the analytical results and the conclusions we draw from them.

USAF data sources

The sources of the MJS data provided by the USAF are identified in Table 4. For each source, the table shows the data system name and the types of information it includes, plus the years covered by, and the number of unique I-C records contained in, the submitted extracts.

Table 4. USAF data sources

Data system	Included information	Fiscal years	I-C records
Air Force Justice Information System (AFJIS)	Incidents reported to, but not investigated by, security forces units	2020-21	6,066
	Completed security forces investigations	2020-21	15,024
Investigative Information Management System (I2MS)	Closed investigations conducted by the Office of Special Investigations (OSI)	2013-21	10,883
Automated Military Justice Analysis and Management System (AMJAMS)	NJPs imposed	2013-21	40,324
	CMs tried and completed	2013-21	4,563

Source: CNA.

Air Force Justice Information System (AFJIS)

AFJIS is the data system for all USAF security forces units. It replaced the Security Forces Management Information System (SFMIS) in October 2019 [16]. Although AFJIS is based on a modernized structure, it includes the same investigative information relevant to this study that was contained in SFMIS: the nature and details of incidents and offenses handled by security forces units, as well as the associated disposition decisions made by military commanders and

their related outcomes [17-18]. To support AFJIS use and maintenance, the USAF also established the Air Force Criminal Justice Information Cell.[29]

The AFJIS data were provided in two separate files: one for completed security forces investigations, and one for incidents reported to the security forces, but not investigated. Each extract covers incidents in which the investigation subjects are military personnel and that were closed (i.e., had dispositions for all associated offenses) in FY 2020 and FY 2021. For reasons described below, the data provided are limited not only in terms of the timeframe covered, but also in terms of the information included. As a result, we did not use AFJIS data as the basis for any disparity analyses.

Investigative Information Management System (I2MS)

I2MS is the data system for the Air Force Office of Special Investigations (AFOSI), which is the USAF's MCIO. I2MS contains the same types of information about AFOSI investigations that is covered in the AFJIS data for security forces investigations [20]. More broadly, the I2MS data are intended to improve AFOSI operations by assisting AFOSI and other military commanders in directing and managing criminal investigative and law enforcement programs at USAF installations worldwide. Although I2MS was considered an example of a modern records management system when it was introduced in 2006 [20], AFOSI announced in February 2022 that it would be launching a new system, called the OSI Records, Investigations & Operations Network (ORION) later in the year. According to the AFOSI press release, ORION will "be rapidly configurable, hosted in the cloud, offer mobile access, integrate with mission partners, and have cross-domain solutions" and will, thus, allow OSI special agents "to pivot to keep up with the new schemes and the new methods of crime" [21].

The I2MS extract provided for the study includes information for fully closed cases that were opened in FY 2013 through FY 2021 and in which investigation subjects were active duty USAF members.

Automated Military Justice Analysis and Management System (AMJAMS)

AMJAMS stores information associated with USAF CMs and NJPs, including information on docket entries, the accused, alleged offenses, trials, decisions, and sentences [22]. The data stored in AMJAMS have multiple intended uses, including supporting statistical studies to show

[29] According to *Air Force Times* reporting, the timeline for AFJIS development was accelerated in response to the 2017 shooting at the First Baptist Church in Sutherland Springs, Texas, in which a former Airman killed 26 people and wounded 22 more using a weapon that he was allowed to legally purchase because the USAF had not submitted information about his prior assault conviction to the FBI as required by federal law [19].

how military justice involvement affects the quality of the force and the personnel needs of the service, and monitoring the status of military justice actions from the investigation stage through to the completion of the appellate process [23]. As with I2MS, the USAF is planning to replace AMJAMS with an updated system—the Disciplinary Case Management System (DCMS). In its FY 2021 annual report to Congress, the USAF JAG provided this information about the status of, and risks associated with, the new system:

> DCMS will begin replacing AMJAMS in FY22 through a phased plan. The JAG Corps secured funding for the first two years of the program, but has not been granted full funding for follow-on years. In FY21 and previous years, the JAG Corps has been able to modify AMJAMS to support legislative requirements mandated by the NDAA. However, AMJAMS and other Department of the Air Force information technology platforms may be incapable of supporting all legislatively-mandated technology requirements for FY22. Failure to fully fund the DCMS program through the Future Years Defense Program could negatively impact the timely implementation of DCMS and the ability to meet all legislative requirements. [15]

The AMJAMS data were provided in two separate files: one includes Article 15 cases in which an NJP was ultimately imposed; the other includes cases with completed CMs. In both files, offenders are active duty USAF members and the years covered are FY 2013 through FY 2021.

USAF data assessment

We assess the quality of the USAF data extracts according to the usability and completeness criteria listed in the description of our approach to data assessment. The data samples described here do not match the final samples used for analysis, which include only regular, active duty enlisted personnel and data from FY 2014 through FY 2020.

Usability: Individual IDs

Since some individuals are associated with more than one case and some cases include multiple individuals, it is necessary to create unique I-C records as the unit of observation. Table 5 shows how we created the unique records for each USAF dataset. The AMJAMS data were already structured with I-C records as the unit of observation, so the numbers of unique cases and unique I-C records are the same for those extracts.

The table also shows which data extracts have missing individual IDs and the impact of that missing information on the number of usable I-C records. The information is complete in the

I2MS[30] and AMJAMS data files, and there are a few individual IDs missing from the AFJIS investigations data. There are, however, many missing individual IDs in the AFJIS incident data.

Table 5. Creating I-C records in the USAF datasets and the impact of missing IDs

Record type	AFJIS incidents[a]	AFJIS investigations[a]	I2MS[b]	AMJAMS NJP[c]	AMJAMS CM[d]
Total records[e]	28,021	28,950	10,883	40,324	4,563
Unique records					
Individuals	5,079	13,489	10,224	36,259	4,454
Cases	3,044	6,120	10,096	40,324	4,563
I-C records	6,066	15,024	10,883	40,324	4,563
Missing IDs					
Total records	1,927	499	0	0	0
I-C records	759	354	0	0	0
I-C records with IDs					
Counts	5,307	14,670	10,883	40,324	4,563
Share of total	87%	98%	100%	100%	100%

Source: CNA.
[a] The AFJIS incident and investigations extracts include closed cases with dispositions for all associated offenses.
[b] The I2MS extract includes fully closed cases.
[c] The AMJAMS NJP extract includes cases in which a punishment was imposed.
[d] The AMJAMS CM extract includes cases in which a CM occurred and was completed.
[e] These records reflect all submitted data; they do not reflect various data-cleaning steps used to create the final analytical samples.

Usability: Case IDs

Each USAF data system uses different case IDs: the main case IDs in the AFJIS extracts are case control numbers (CCNs) that are based on similar structures, but that do not match across the incident and investigations files;[31] I2MS uses 14-character case numbers; and AMJAMS uses 8-character case IDs. Thus, there is no formal way to link cases across any of the USAF's MJS data systems.

[30] The initial I2MS submission did not include individual IDs for offenders. This problem was eventually corrected, and we were able to match most records to individuals in the ADMF.

[31] According to the AFJIS providers, when an incident is sent through a "cross community action" to the investigation arm, the case ID changes to capture the new office and number within that office's sequence.

Usability: Data structure

Each of the USAF data extracts has some structural features that limited our ability to fully exploit the information they contain.

The AFJIS team willingly responded to our data request, but what they could provide was limited because many of the variables in the system are stored as long strings of narrative-form text that are not easily recoverable. We were told that the complete data pull could have been accomplished, but it would have required time and money, as well as redirecting assigned resources from other priorities. We also note that the data on security forces investigations that are stored in the legacy SFMIS were archived and no longer practically accessible.

In the I2MS data on AFOSI investigations, three fields—offense codes, investigation results, and dispositions—were provided, but could not be used for analysis in the received format. Specifically, the extract contains multiple merged rows of data associated with each original record, but neither the individual ID nor the case ID is carried across all relevant rows. As a result, we could not map every row to a unique I-C record. We believe that these variables could have been restructured into a usable format, but by the time we received the reidentified file from DMDC (April 25, 2022), we had neither the time nor the resources to invest in a re-structuring effort.

In the NJP and CM data from AMJAMS, the offenses field was provided in a non-delimited free-text format with multiple specifications listed and it was challenging to parse this field to make it usable for quantitative analysis. In addition, because the data were already rolled up to the I-C level, we could not determine which verdict, punishment, or sentence went with what offense.

We do not know if the structural issues with the I2MS and AMJAMS extracts should be considered flaws in these systems or if they are simply the results of how the data were pulled to fulfill our request. At a minimum, the possibility that such issues can arise is something to be considered when future data requests are made, especially if timing matters.

Completeness for analyzing MJS outcomes

Next, we assess the completeness of the USAF data relative to our request for information about important MJS outcomes identified in the guiding framework. Table 6 lists the outcome variables we requested and shows whether they were provided in the extracts from I2MS and AMJAMS. The table does not include AFJIS because, due to the structural issues mentioned above, the AFJIS extract includes only basic demographic information about investigation subjects and the offenses under investigation; it does not include information about investigation outcomes or post-investigation disposition decisions.

The entries in Table 6 are yes/no to indicate whether an outcome variable was provided and N/A to indicate that an outcome variable is outside the purview of the specified system. Other entries are used to provide specific information about the data we received.

Table 6. Requested outcome variables included in data submitted by USAF providers

Requested outcome	I2MS	AMJAMS: NJP	AMJAMS: CM
Investigation			
Military LEA indicator	**AFOSI only**[a]	**Yes**	**Yes**
Military LEA ID	No	**Yes**	**Yes**
Multiple civilian LEA indicators	No	**Yes**	**Yes**
Disposition			
Punishment below NJP	Disposition variable provided in difficult format	No	No
NJP offered			
CM type			
Nonjudicial Punishment (NJP)			
NJP accepted	-N/A-	No	-N/A-
NJP outcome	Result and sentence provided in difficult format	**Punishment imposed**[b]	
NJP outcome appealed	-N/A-	No	
NJP appeal result		No	
Court-martial (CM)			
Pre-trial confinement	-N/A-	-N/A-	No
Plea offer			No
Terms of nth plea deal			No
Acceptance of plea offer			No
Non-CM resolution			No
Proceed to CM			**Yes**[c]
CM type			**Yes**
Number of judges			No
CM verdict	Result and sentence provided in difficult format		**Yes**
CM sentence			**Yes**
Appeal indicator	-N/A-		No
Appeal result			No

Source: CNA.
[a] The I2MS extract includes cases investigated by AFOSI only.
[b] The AMJAMS NJP extract includes cases in which a punishment was imposed.
[c] The AMJAMS CM extract includes cases in which a CM occurred and was completed.

The table shows that the I2MS data extract includes most of the outcome variables we requested, but we could not use the information because of the structural issues mentioned above. Turning to the AMJAMS NJP and CM data, although initial communications with the AMJAMS providers indicated that the system includes most of the outcome variables we requested, we received only a subset of those variables in each file. Specifically, we received no information to capture disposition decisions in the incident processing phase or any outcomes in the pre-hearing/pre-trial phase. The AMJAMS submission does, however, include an investigation agency variable that indicates whether a case was investigated by AFOSI, security forces, a civilian agency, or the command. Given the inability to link I2MS and AMJAMS data, this variable was especially valuable.[32] Finally, neither AMJAMS extract includes information on appeals.

Taken together, the USAF MJS data provided for this study leave the following gaps in our ability to track cases across all phases of the MJS and calculate appropriate conditional outcome disparities:

- Incident processing
  - Entry into the MJS: We cannot observe all Airmen who were accused of disciplinary and criminal offenses; we can only see Airmen who were investigated by AFOSI. Since these data cannot be linked to the NJP and CM data, we cannot use these data to observe incident processing outcomes for those cases.
  - Disposition: We cannot observe any initial disposition decisions, only after-the-fact disposition outcomes.
- NJP: We cannot observe anything before the imposition of punishment. Thus, we are missing all steps in the incident processing and pre-hearing phases and all but the last step in the adjudication and sentencing phase. In particular, we cannot observe cases in which a punishment was not imposed (i.e., cases that were dismissed or resulted in a not guilty finding).
- CM: We cannot observe anything before the final outcome of a CM and the resulting punishment; we are missing all steps in the incident processing and pre-trial phase and the first step in the adjudication and sentencing phase.

[32] We note, however, that in the NJP data, this variable was blank for 453 cases—about 1 percent of the total. These records were grouped with command investigations in our analysis because the primary goal was to distinguish between cases with professional investigations conducted by military or civilian LEAs and other investigations.

USAF analytical samples

Next, we provide selected descriptive statistics for the combined MJS-DMDC analytical samples for each USAF data source, focusing on the data elements that are most important for understanding the analysis of outcome disparities.

MJS outcomes analyzed for the USAF

Table 7 lists the MJS outcomes we could analyze using the USAF data and the associated comparison populations that form the basis of the disparity calculations. Identifying the comparison populations highlights which outcomes are *unconditional* first-observed outcomes (i.e., those for which the comparison population is all Airmen) and which are *conditional* MJS outcomes (i.e., those for which the comparison populations come from the MJS data).[33]

Table 7. MJS outcomes analyzed for the USAF

Requested outcome	Analyzed outcome	Comparison population
Investigation		
Military LEA indicator	Investigated by AFOSI	All Airmen
NJP		
NJP outcome	NJP guilty finding (Overall & by offense type)	All Airmen
NJP outcome	NJP punishment type	Those with guilty findings
CM		
Proceed to CM	Tried by CM (Overall, by offense type, & by CM type)	All Airmen
CM finding	CM guilty finding (Overall and by investigation type)	Those with CM verdicts
CM sentence	CM punishment type	Those with guilty findings

Source: CNA.

Sample sizes and percentages for first-observed outcomes

Table 8 reports counts and percentages for the first-observed outcomes from the final USAF samples. The first column in the table lists the REG groups of interest in this study. The second and third columns show, overall and for each REG group, the number and percentage of enlisted Airmen in the ADMF sample for FY 2014 through FY 2020: 71.1 percent of the sample

[33] Recall that models of conditional MJS outcomes include offense types and counts as explanatory variables.

is White, 16.8 percent of the sample is Black, 13 percent of the sample is Hispanic, and 20.7 percent of the sample is female.

The fourth and fifth columns of Table 8 show the number and the percentage of each REG group investigated by AFOSI according to the I2MS data. The sixth and seventh columns display the same information for those identified in the AMJAMS NJP file as having been found guilty at NJP and having had a punishment imposed, and the eighth and ninth columns display the information for those in the AMJAMS sample of completed CMs. The data indicate that, from FY 2014 through FY 2020, 1.8 percent of Airmen were investigated by AFOSI, 6.6 percent were found guilty at NJP, and 0.8 percent were tried by CM.

Table 8. Sample sizes and percentages for all Airmen and first-observed outcomes

	All Airmen		Investigated by AFOSI		Guilty at NJP		Tried by CM	
REG group	Count	% of total	Count	% with outcome	Count	% with outcome	Count	% with outcome
All	511,584	100.0	9,090	1.8	33,792	6.6	4,019	0.8
White	363,501	71.1	5,795	1.6	21,130	5.8	2,583	0.7
Black	86,089	16.8	2,246	2.6	8,901	10.3	964	1.1
Other	50,252	9.8	849	1.7	3,143	6.3	382	0.8
Unknown	11,742	2.3	200	1.7	618	5.3	90	0.8
Non-Hispanic	444,751	86.9	8,042	1.8	29,976	6.7	3,613	0.8
Hispanic	66,318	13.0	1,045	1.6	3,802	5.7	406	0.6
Unknown	515	0.1	3	0.6	14	2.7	0	0.0
Male	405,890	79.3	8,250	2.0	28,802	7.1	3,705	0.9
Female	105,694	20.7	840	0.8	4,990	4.7	314	0.3

Source: CNA.

Using the data in Table 8, we can calculate simple DIs to determine whether REG disparities exist in the raw data. Doing this, we find that, compared to White Airmen, Black Airmen were 1.64 (2.6/1.6) times more likely to be investigated by AFOSI, 1.78 (10.3/5.8) times more likely to be found guilty at NJP, and 1.58 (1.1/0.7) times more likely to be tried by CM.

We also see outcome disparities by ethnicity and gender, but Hispanic and female Airmen were less, rather than more, likely than non-Hispanic and male Airmen to experience these first-observed outcomes. Hispanic Airmen were investigated, found guilty at NJP, and tried by CM at 0.87, 0.85, and 0.75 times the rates of non-Hispanic Airmen, respectively. Turning to gender disparities, women were much less likely than men to experience these outcomes. Women

were investigated, found guilty at NJP, and tried by CM at 0.39, 0.67, and 0.33 times the rates of men, respectively.

Regression-adjusted USAF outcome disparities

Next, we examine how USAF MJS outcomes differed by REG, holding the control factors constant and focusing on the following comparisons:

- Race: Black relative to White
- Ethnicity: Hispanic relative to non-Hispanic
- Gender: female relative to male

Odds ratios for observable USAF outcomes

Our primary measurement of outcome disparities is ORs estimated with logistic regression models that control for the offender-, incident-, and process-related factors that may be correlated with both REG and the MJS outcome of interest. The estimated ORs for the observable USAF MJS outcomes are shown in Table 9.[34] The shading in Table 9 identifies disparities in the five categories defined in the approach section:

- Green ⇒ small disparities or no disparity
- Light red ⇒ mid-sized positive disparities
- Dark red ⇒ large positive disparities
- Light gold ⇒ mid-sized negative disparities
- Dark gold ⇒ large negative disparities

Finally, for each REG group, we also ranked the 33 USAF outcomes according to OR size, and the five largest positive disparities are identified in bold font.

The primary result that is immediately visible in the table is that the cells for the first-observed outcomes in the column for Black Airmen are red, while they are green or gold in the column for Hispanic Airmen and gold in the column for female Airmen. In contrast, the cells for the conditional MJS outcomes are generally green or gold across all three columns. Thus, the largest positive USAF MJS disparities are Black-White racial disparities in first-observed outcomes.

[34] See Appendix B for a discussion of the impact of the offender-, incident-, and process-related control factors on measured outcome disparities. Complete output from the 33 final logit models is available upon request.

Table 9. Odds ratios for modeled USAF outcomes[a]

Outcome	Black	Hispanic	Female
Incident processing			
Investigated by AFOSI	1.67***	0.96	0.41***
NJP outcomes by MJS phase, offense, and punishment type			
NJP guilty finding	1.66***	0.85***	0.67***
NJP guilty finding (drug offenses)	**2.65*** **	0.62***	0.55***
NJP guilty finding (sex offenses)	**1.69*** **	1.13	0.19***
NJP guilty finding (other civilian offenses)	**1.74*** **	0.96	0.62***
NJP guilty finding (military-specific offenses)	1.50***	0.86***	0.71***
NJP punishment type (fine)	1.02	1.10**	0.95
NJP punishment type (reduction in rank)	0.99	0.83***	0.90
NJP punishment type (restriction)	1.19***	**1.19*** **	0.99
NJP punishment type (reprimand)	0.94	0.97	0.89
NJP punishment type (extra duty)	1.04	1.05	0.77***
CM outcomes by MJS phase, CM type, offense, and punishment type			
Tried by CM (total)	1.54***	0.75***	0.32***
Tried by CM (SCM)	**2.00*** **	0.61***	0.57***
Tried by CM (SPCM)	1.36***	0.72***	0.45***
Tried by CM (GCM)	1.60***	0.88	0.08***
Tried by CM (drug offenses)	1.25***	0.61***	0.54***
Tried by CM (sex offenses)	1.56***	0.91	0.03***
Tried by CM (other civilian offenses)	1.61***	0.76***	0.23***
Tried by CM (military-specific offenses)	**1.78*** **	0.72***	0.40***
CM guilty finding	0.63***	0.63***	**1.17**
CM guilty finding: Professional investigation[b]	0.63***	0.66***	**1.29**
CM guilty finding: Command investigation/unknown[b]	0.21*	**1.14**	0.75
CM punishment type (fine)	0.80**	0.88	**1.00**
CM punishment type (reduction in rank)	0.82	**1.15**	0.84
CM punishment type (restriction)	1.29*	0.67*	**1.91*** **
CM punishment type (reprimand)	0.87	**1.19**	0.86
CM punishment type (confinement)	0.89	0.97	0.84
CM punishment type (discharge)	0.94	**1.32***	0.43***
CM punishment type (hard labor)	1.06	1.07	**1.05**

Source: CNA calculations using the combined USAF MJS-DMDC datasets.

[a] Statistical significance: 1, 5, and 10 percent levels indicated by ***, **, and *, respectively. Shading: green ⇒ OR = 0.9-1.10 or insignificant; light red ⇒ significant OR = 1.11-1.5; dark red ⇒ significant OR > 1.51; light gold ⇒ significant OR= 0.5 to 0.89; dark gold ⇒significant OR < 0.5. Bold indicates five largest positive disparities.

[b] Professional investigations are those conducted by AFOSI, USAF security forces, or a civilian LEA; command investigations are either chain of command or command-directed investigations.

To interpret the meaning of these results, we consider how the disparities differ by when and where they occur in the MJS process and by whether they are associated with high- or low-discretion outcomes. We focus primarily on positive disparities since that is the focus of the study. In addition, when the results vary by REG group, we discuss each group separately.

Disparities at specific points in the USAF MJS

Determining where the largest disparities exist provides information about potential causes of the disparities and identifies points in the process where policy-makers can focus efforts to eliminate disparities, including efforts to uncover and address any bias that may exist in the system.

Black-White disparities

The largest Black-White disparities are measured at the first-observed outcomes. Controlling for the other factors, Black Airmen were more likely than White Airmen to be investigated by AFOSI, found guilty at NJP, and tried by CM. The ORs for these outcomes are 1.67, 1.66, and 1.54, respectively, and all are statistically significant at the 1 percent level. Since we do not observe any intermediate outcomes before being found guilty at NJP or being tried by CM, we cannot pinpoint where these disparities truly arose. Thinking back to the hypothetical conditional and unconditional disparities shown in Table 1, the estimated ORs for these actual outcomes could be measuring disparities at the specified MJS points or they could be picking up disparities that occurred earlier—either at the point of initial accusation or at the disposition decision.

From these points forward, however, we can be more precise. First, conditional on being tried at CM, Black Airmen were less likely than White Airmen to be found guilty. The OR for this conditional outcome is 0.63 and it is significant at the 1 percent level. This result suggests that there was something fundamentally different about the cases brought against Black versus White Airmen and could, thus, constitute evidence of bias at an earlier point in the MJS process. This outcome merits further investigation.

Finally, conditional on being found guilty at NJP and CM, the Black-White disparities associated with receiving the different punishments are generally small or insignificant. There were two exceptions to this pattern. The ORs for receiving some type of restriction post-NJP and post-CM are 1.19 and 1.29, respectively. We do not have knowledge that allows us to interpret the exceptional results. Overall, we see little evidence of racial bias at this sentencing phase of the MJS.

Hispanic-non-Hispanic disparities

In general, the disparities between Hispanic and non-Hispanic Airmen are much smaller in magnitude than the disparities between Black and White Airmen. To the extent that ethnic

disparities do exist, however they are negative, rather than positive. For example, the ORs for an NJP guilty finding and trial by CM—two of the three first-observed outcomes—are 0.85 and 0.75, respectively, and they are statistically significant at the 1 percent level.

The ethnic disparities associated with being found guilty at CM are negative. The significant OR of 0.33 indicates that, conditional on being tried by CM and controlling for other factors, Hispanic Airmen were less likely than non-Hispanic Airmen to be convicted of the charged crimes. Thus, as we concluded for Black Airmen, there seems to be something different about the cases brought against Hispanic versus non-Hispanic Airmen. The fact that Hispanic Airmen were less likely to be tried in the first place does not negate this interpretation.

Finally, the only positive disparities for Hispanic Airmen are those associated with punishments after NJP (restriction) and CM punishment type (discharge). The CM outcome is another place that policy-makers should study more carefully. Is there a reason that, even after controlling for other factors, Hispanic Airmen were more likely to be discharged if found guilty of an offense?

Female-male disparities

The gender disparities are relatively large but, like the ethnic disparities, they are typically negative. Female Airmen were, in most cases, less likely than male Airmen to experience the MJS outcomes we analyzed. For the three first-observed outcomes—being investigated by AFOSI, found guilty at NJP, and tried by CM—the ORs are 0.32, 0.67, and 0.41, respectively, and they are all significant at the 1 percent level.

Women who were tried by CM were more likely than men to be found guilty. Although this OR of 1.17 is one of the largest positive estimated ORs for women, it is not statistically significant and is, therefore, shaded green. This could indicate that the cases brought against women were fundamentally different than the types of cases brought against men, but the evidence is weaker for gender than for race and ethnicity.

Turning to punishments, the gender results are qualitatively the same as the results for race and ethnicity. With only a few exceptions, women and men are equally likely to receive the different types of punishments.

High- and low-discretion USAF disparities

Next, we consider whether the measured disparities reported in Table 9 vary according to the hypothesized level of discretion associated with the outcome. If there is unfavorable REG bias in the MJS, we would expect to see greater positive disparities for outcomes that result from higher levels of either institutional or individual discretion. Therefore, we focus on how significant positive disparities vary across the relatively high- and relatively low-discretion outcomes we identified using the guiding framework:

- MJS forum
  - Higher discretion: NJP and SCM
  - Lower discretion: SPCM and GCM
- Offense type
  - Higher discretion: military-specific offenses
  - Lower discretion: drug- and sex-related offenses
- Investigation type
  - Higher discretion: command investigations
  - Lower discretion: investigations by professional LEAs

Black-White disparities

Starting with MJS forum, there is a slight discretion-related disparity pattern. The ORs for lower discretion SPCMs and GCMs—1.36 and 1.60, respectively—are lower than the ORs for the higher discretion Article 15s and SCMs—1.66 and 2.0, respectively. This could be evidence of bias in commanders' decisions to send Airmen to these two less formal forums.

Turning to offense type, the disparities for guilty at NJP are larger for lower discretion offenses. Specifically, the ORs for drug- and sex-related offenses are 2.65 and 1.69, respectively, compared to 1.5 for military-specific offenses. The offense-specific disparities for tried by CM, however, show the opposite pattern: the OR for higher discretion military-specific offenses is 1.78 compared to ORs of 1.25 and 1.56 for lower discretion drug- and sex-related offenses.

The most striking discretion-related disparity pattern is for investigation type. Conditional on being tried by CM, the OR for being found guilty after a professional investigation is 0.63 compared to an OR of 0.21 for being found guilty after a command investigation or an unknown investigation type. This finding is consistent with the findings from the 2019 GAO study [3]. It also provides support for the idea that CM cases brought against Black Airmen are different—potentially weaker—than cases brought against White Airmen.

Overall, these results provide a confusing pattern of USAF outcome disparities based on discretion. However, we must again remember that, in the USAF data, we cannot observe any outcomes from the incident processing and pre-hearing/trial phases, so it is unclear how and why the cases for Airmen of different races entered the system and proceeded through the MJS. At a minimum, USAF policy-makers should study the role of investigation type in determining which cases are referred to CM. The large positive disparity for trial by SCM also merits further study.

Ethnic and gender disparities

The ethnic and gender disparities associated with higher and lower discretion USAF outcomes were either small, insignificant, or negative. Therefore, we do not assess these disparities based on MJS forum or offense type.

We do note, however, that the ethnic disparities associated with conviction following trial by CM vary depending on whether the case was investigated professionally or by the command. Specifically, the estimated ORs indicate that Hispanic Airmen were less likely than non-Hispanic Airmen to be convicted when their cases were professionally investigated, but equally likely to be convicted when their cases were investigated by the command. This result suggests that the command-investigated cases for Hispanic Airmen were stronger or adjudged differently than the professionally investigated cases. It is the opposite of the result for race.

USAF conclusions

Data assessment

The USAF data extracts include the individual and case IDs needed to create the I-C records required to analyze the data with the appropriate unit of observation, but the fact that each data system uses different case IDs means that cases cannot be tracked across systems.

The data we received did not support analyzing all the outcomes included in our data request. In some cases, the required outcome variables were not provided; in other cases, they were provided but in structures that were not readily usable. The main impact on the analysis is that we have very little information about outcomes that occur in the incident processing phase, especially regarding initial accusations and initial dispositions, and in the pre-hearing/pre-trial phase, especially involving decisions or outcomes that result in a case not going forward along the initial disposition path (either NJP or CM). This means that we are missing key interim outcomes on which later outcomes should be conditioned.

We do not know why the data were incomplete or provided in problematic formats. It is likely that it was related to how the data request was communicated and then executed. The fact that the USAF is in the process of updating its systems in response to new reporting requirements may also have contributed to the usability and completeness issues, especially if the identified funding shortfalls are affecting the providers' ability to extract and format data.

REG disparities

Even after controlling for other factors, there were significant REG disparities in USAF MJS outcomes. The Black-White disparities were generally positive—Black Airmen were more likely than White Airmen to be investigated by AFOSI and, for all offense types, more likely to

be found guilty at NJP and tried by CM. In contrast, the ethnic and gender disparities were generally small or negative—Hispanic and female Airmen were equally or less likely than non-Hispanic and male Airmen, respectively, to experience these same first-observed outcomes. Because the data do not allow us to observe outcomes in the incident processing and pre-hearing/pre-trial phases of the USAF MJS, we do not know when these disparities arise. For example, we cannot tell whether it is at the point of initial accusation or at the initial disposition decision.

Conditional on being tried by CM, the measured racial and ethnic disparities for being found guilty were negative—Black and Hispanic Airmen were less likely than White and non-Hispanic Airmen to be found guilty at CM. These results suggest that there was something different about the cases brought against members of these groups. For example, the results are consistent with a scenario in which the cases brought against Black and Hispanic Airmen were weaker than the cases brought against White and non-Hispanic Airmen, respectively. This interpretation is supported with respect to cases against Black Airmen by the finding that, conditional on being tried by CM and controlling for other factors, the negative Black-White guilty disparities were even larger for cases that were investigated by commands rather than professional LEAs.

Finally, with only a few exceptions, conditional on being found guilty at NJP or CM, members of all REG groups were equally likely to experience the different types of punishments.

Combined these results indicate that data for outcomes that occur during the incident processing and pre-trial/pre-hearing phases of the USAF MJS must be collected and analyzed to better understand and eliminate the observed positive racial disparities. Good starting places would be evaluating the investigation practices used during command investigations and the initial disposition decisions of USAF commanders, as well as studying the strength of CM cases against Black and Hispanic Airmen relative to that of cases against White and non-Hispanic Airmen.

Analysis and Results: Army

This section describes the data, analysis, and results for the USA. It also includes our interpretations of the analytical results and the conclusions we draw from them.

USA data sources

The sources of the MJS data provided by the USA are identified in Table 10. For each data source, the table shows the data system name and the types of information it includes, plus the years covered by, and the number of unique I-C records contained in, the submitted extracts.

Table 10. USA data sources

Data system	Included information	Fiscal years	I-C records
Army Law Enforcement Reporting and Tracking System (ALERTS)	Closed investigations conducted by military police investigation (MPI) units and the Criminal Investigation Division (CID)	2017-21	125,536
Military Justice Online (MJO): NJP	Offenses disposed of by NJP proceedings	2013-21	186,313
Military Justice Online (MJO): CM	Offenses initially disposed of by referral to CM, but not necessarily ending in a complete trial	2013-21	11,246
Army Courts-Martial Information System (ACMIS)	Cases referred to GCM or SPCM that went to arraignment	2013-21	6,869

Source: CNA.

Army Law Enforcement Reporting and Tracking System (ALERTS)

ALERTS is the primary case management system for all USA law enforcement professionals, including Criminal Investigation Division (CID) agents and military police investigation (MPI) units. The system stores detailed accounts of criminal investigations, including information about and statements provided by investigation subjects, witnesses, and victims, as well as codes for the types of crimes investigated and dates indicating when they occurred. The data are used to develop required law enforcement and serious incident reports, support the

maintenance of law and order through the investigation of complaints and incidents, and accomplish management studies involving the analysis and compilation of statistics [24-25].

ALERTS was introduced in 2016 to combine CID and MPI investigation data into one system. Therefore, the extract provided for this study includes completed cases in which the investigation subjects were active duty enlisted personnel and officers and that were opened in FY 2017 through FY 2021 (rather than FY 2013 through FY 2021).

Military Justice Online (MJO)

MJO contains individual-level data on Army military personnel who are the subjects of a military justice investigation, trial by CM, or other administrative or disciplinary proceedings. It includes information about individuals (e.g., names, SSNs, previous convictions), cases (e.g., unusual case features, documentary evidence, pre-trial advice, disposition recommendations), and case outcomes (e.g., nonjudicial punishments, administrative separations, pre-trial confinement, requests for discharge in lieu of trial by CM, trial records, and judicial orders). MJO data are used to support nonjudicial and other disciplinary proceedings, prosecute or otherwise resolve military justice cases, and to conduct statistical studies that assist with the management and administration of military justice [26].

CNA received two MJO extracts. One extract covers offenses handled by NJP proceedings and includes records of cases that were opened in FY 2013 through FY 2021. The other extract covers cases initially referred to SCM, SPCM, or GCM, including those that had completed trials and those that were resolved with an alternate disposition or dismissed prior to arraignment. The CM extract included cases in which charges were preferred against active duty enlisted personnel and officers from FY 2013 through FY 2021.

Army Courts-Martial Information System (ACMIS)

ACMIS is the data system that stores records of Army SPCM and GCM proceedings for cases that went to arraignment. It includes information about the individuals who appear as accused in CM proceedings, as well as trial records, including information about charged offenses, trial transcripts, and legal reviews. ACMIS data are intended to satisfy statutory requirements for maintaining trial records, answer inquiries concerning specific cases, and guide policy decisions regarding military justice activities [27].

The ACMIS data provided to CNA came in four separate files: a case file, a specifications file, and two files related to appeals—one for the Army Court of Criminal Appeals and one for the Court of Appeals of the Armed Forces. The data include cases in which charges were preferred in FY 2013 through FY 2021. Ultimately, we did not use the ACMIS data as the basis for any disparity analyses because ACMIS does not include data on SCMs, and the study timeline did not allow us to exploit both MJO and ACMIS. We also considered the fact that the data provided

by the other services did not contain the high level of detail for post-trial outcomes provided in ACMIS.

USA data assessment

We assess the quality of the USA data extracts according to the usability and completeness criteria listed in the description of our approach to data assessment. The data samples described here do not match the final samples used for analysis, which include only regular, active duty enlisted personnel and data from FY 2014 through FY 2020.

Usability: Individual IDs

Since some individuals are associated with more than one case and some cases include multiple individuals, it is necessary to create unique I-C records as the unit of observation. Table 11 shows how we created the unique records for each USA dataset.

Table 11. Creating I-C records in the USA datasets and the impact of missing IDs

Record type	ALERTS[a]	MJO NJP[b]	MJO CM[c]	ACMIS[d]
Total records[e]	228,669	380,594	39,712	6,869
Unique records				
Individuals	91,668	151,361	10,468	6,571
Cases	114,428	185,965	11,114	6,869
I-C records	125,536	186,313	11,246	6,869
Missing IDs				
Total records	0	0	298	0
I-C records	0	0	68	0
I-C records with IDs				
Counts	125,536	186,313	11,178	6,869
Share of total	100%	100%	99%	100%

Source: CNA.
[a] The ALERTS extract includes closed investigations conducted by MPI units and CID.
[b] The MJO NJP extract includes offenses disposed of by NJP proceedings.
[c] The MJO CM extract includes offenses initially disposed of by referral to CM, but potentially resolved with an alternate disposition or dismissed prior to arraignment.
[d] The ACMIS extract includes cases referred to GCM or SPCM that went to arraignment.
[e] These records reflect all submitted data; they do not reflect various data-cleaning steps used to create the final analytical samples.

The data in Table 11 show that the MJO file for CMs is the only USA extract for which some individual IDs are missing, but that the effect on the number of unique I-C records is very small.

Recalling that the individual IDs were also used to match the MJS records to the personnel records in the ADMF, a more important type of missing information in the MJO CM file was records for the key dates that were used in conjunction with individual IDs to do the MJO-ADMF match. The file contains six dates and, in 17 percent of the records, none of these dates are populated.[35] As a result, of the 11,178 unique I-C records, 2,238 could not be matched to the ADMF and had to be excluded from the sample used for disparity analysis. The REG distributions of the records that were matched to the ADMF based on individual ID does not differ substantially from the REG distribution of the total. Therefore, we do not think that dropping these records significantly biases our results.

Usability: Case IDs

Each USA data system uses different case IDs. The ALERTS case number is a 17-character field consisting of indicators for the day of the year, the calendar year, and the installation MP code or the CID unit number. MJO uses action numbers with 40 to 42 characters and ACMIS uses an 8-character case number. Although ALERTS receives data from MJO on a regular basis and CM data from MJO and ACMIS can be linked by the name of the defendant, the lack of common case IDs meant that we could not readily merge records across data systems.

Usability: Data structure

In general, the formats of the USA data were readily usable. The exception is that case findings and punishments in the MJO data were not provided by charge; instead, within an I-C case record, the sentence values are the same across all offense rows. The ACMIS extract does include outcomes by charge, but only for the SPCMs and GCMs that it covers.

Completeness and usability for analyzing MJS outcomes

Next, we assess the completeness and usability of the USA data relative to our request for information about important MJS outcomes identified in the guiding framework. Specifically, Table 12 lists the outcome variables we requested and shows whether they were provided in the ALERTS, MJO, and ACMIS data extracts. The entries in Table 12 are yes/no to indicate whether an outcome variable was provided and N/A to indicate that an outcome variable is outside the purview of the specified system. Other entries are used to provide specific information about the usability of the data we received.

[35] The six dates and the shares of records with missing dates are: offense date (75 percent); earliest preferral date (28 percent); date referred to CM (44 percent); date proceedings terminated (98 percent); date of sentence (43 percent); notice of appeal date (99 percent).

Table 12. Requested outcome variables included in data submitted by USA providers

Requested outcome	ALERTS	MJO: NJP	MJO: CM	ACMIS
Investigation				
Military LEA indicator	CID/MPI	Indicators: 99% blank[a]	Indicators: 98% blank[a]	-N/A-
Military LEA ID				
Multiple civilian LEA indicators	Joint w/external			
Disposition				
Punishment below NJP	-N/A-	No	-N/A-	-N/A-
NJP offered		Yes		
CM type		-N/A-	Yes	
Nonjudicial punishment (NJP)				
NJP accepted	-N/A-	Yes	-N/A-	-N/A-
NJP outcome		Yes		
NJP outcome appealed		Yes		
NJP appeal result		No		
Court-martial (CM)				
Pre-trial confinement	-N/A-	-N/A-	Yes	Yes
Plea offer			No	No
Terms of nth plea deal			No	Yes
Acceptance of plea offer			No	Yes
Other non-CM resolution			Not fully populated	-N/A-
Proceed to CM			No	-N/A-
CM type			Yes	GCM and SPCM only
Number of judges			Yes	Yes
CM verdict			Full acquittal[b]	Yes
CM sentence			Yes	Yes
Appeal indicator			Date: 99% blank	Yes
Result of appeal			No	Yes

Source: CNA.
[a] The MJO NJP and CM extracts have fields for CID and MPI name, and a civilian law enforcement indicator, but none of these variables was populated for more than a few records.
[b] There is no "verdict" variable in the MJO CM extract; only a 0-1 variable called full acquittal, which we interpreted as an indicator of acquittal on all charges.

The table shows that the ALERTS extract includes indicators of which military LEA conducted a given investigation, as well as an indicator of investigations conducted jointly with external

LEAs. It does not include any post-investigation outcome variables because they are fed into ALERTS from MJO; ALERTS is not the authoritative system for these data elements.

Turning to the MJO data, the NJP extract includes most of the requested NJP outcomes except punishment below NJP and the outcome of an appeal. The MJO CM extract, in turn, includes information about most of the requested CM outcomes except those related to plea agreements during the pre-trial phase. The CM extract is also missing variables to explicitly indicate either the start or the completion of a trial, and the variables indicating non-CM resolutions (the converse of starting a trial) were not well populated.[36] Therefore, we ultimately used the existence of a sentence date as a proxy for started and completed trials: cases with sentence dates were categorized as having been tried by CM.[37]

Finally, the ACMIS extract includes variables related to most of the requested post-disposition outcomes associated with SPCMs and GCMs that went to arraignment. Since we did not use these data for disparity analysis, we did not delve into the usability of the variables provided.

Taken together, the USA MJS data provided for this study left the following gaps in our ability to track cases across all phases and steps along the MJS paths:

- Incident processing
  - Entry into the MJS: We cannot observe all Soldiers who were accused of disciplinary and criminal offenses; we can only see Soldiers who were investigated by CID or MPI units or whose cases were initially disposed of by NJP or CM.
  - Disposition: We can observe *ex post* disposition decisions that resulted in a case starting down the NJP or CM path, but we do not know *ex ante* how these cases entered the MJS or were sent on either path.
- CM path: Once a case was referred to CM, we cannot separately observe starting and completing trial by CM. In other words, we cannot observe cases that are referred to CM, but do not ultimately proceed to trial.

[36] Specifically, the extract includes variables to indicate why and when a case was terminated. Both variables are, however, blank for 98 percent of records, and various data checks gave different indications regarding whether the blank values reflect missing data or whether they identify cases that were not terminated and did, in fact, proceed to trial.

[37] Because sentence date was also missing for multiple records, there is still some uncertainty associated with using the sentence-date variable to identify cases with completed CMs: it may exclude some late-period cases that did go to trial but had not progressed far enough to be completed, and it may exclude cases in which sentence date was truly missing.

USA analytical samples

Next, we provide selected descriptive statistics for the combined MJS-DMDC analytical samples for each USA data source, focusing on the data elements that are most important for understanding the analysis of outcome disparities.

MJS outcomes analyzed for the USA

Table 13 lists the MJS outcomes we could analyze using the USA data and the associated comparison populations that form the basis of the disparity calculations. Identifying the comparison populations highlights which outcomes are *unconditional* first-observed outcomes (i.e., those for which the comparison population is all Soldiers) and which are *conditional* MJS outcomes (i.e., those for which the comparison populations come from the MJS data). [38]

Table 13. MJS outcomes analyzed for the USA

Requested outcome	Analyzed outcome	Comparison population
Investigation		
MLE indicator	Investigated by CID or MPI unit	All Soldiers
NJP		
Proceed to NJP	NJP proceedings (Overall & by offense type)	All Soldiers
NJP outcome	NJP guilty finding	Those with NJP verdicts
NJP sentence	NJP punishment type	Those with guilty findings
NJP outcome appealed	Appeal indicated	Those with guilty findings
NJP outcome appealed	No appeal indicated	Those with guilty findings
CM		
Proceed to CM	Referred to CM (Overall, by offense type, & by CM type)	All Soldiers
CM finding	CM guilty finding	Those with CM verdicts
CM sentence	CM punishment type	Those with guilty findings

Source: CNA.

Sample sizes and percentages for first-observed outcomes

Table 14 reports counts and percentages for the first-observed outcomes from the final USA samples. The first column in the table lists the REG groups of interest in this study. The second

[38] Recall that models of conditional MJS outcomes include offense types and counts as explanatory variables.

and third columns show, overall and for each REG group, the number and percentage of Soldiers in the ADMF sample for FY 2014 through FY 2020: 69.3 percent of the sample is White, 22.7 percent of the sample is Black, 15.5 percent of the sample is Hispanic, and 14.8 percent of the sample is female.

The fourth and fifth columns show the total number and the percentage of each REG group who were investigated by CID agents or MPI units. The sixth and seventh columns display the same information for those in the sample who went to NJP; and the eighth and ninth columns display the information for those who were referred to CM. The data show that over the study period, 7.3 percent of Soldiers were investigated by a USA LEA, 13.1 percent went to NJP proceedings, and 0.8 percent were referred to CM.

Table 14. Sample sizes and percentages for all Soldiers and first-observed outcomes

	All Soldiers		Investigated by CID or MPI unit[a]		NJP proceedings		Referred to CM	
REG group	Count	% of total	Count	% with outcome	Count	% with outcome	Count	% with outcome
All	1,010,706	100.0	74,066	7.3	132,621	13.1	7,673	0.8
White	700,424	69.3	42,996	6.1	82,583	11.8	4,447	0.6
Black	229,500	22.7	27,038	11.8	42,783	18.6	2,670	1.2
Other	60,739	6.0	3,442	5.7	6,270	10.3	358	0.6
Unknown	20,043	2.0	590	2.9	985	4.9	198	1.0
Non-Hispanic	853,001	84.4	61,891	7.3	113,458	13.3	6,520	0.8
Hispanic	157,114	15.5	12,160	7.7	19,154	12.2	1,152	0.7
Unknown[b]	591	0.1	15	2.5	--	--	--	--
Male	861,079	85.2	65,897	7.7	114,728	13.3	7,277	0.9
Female	149,620	14.8	8,169	5.5	17,893	12.0	396	0.3

Source: CNA.
[a.] The timeframe covered by the investigation data from ALERTS is FY 2017 through FY 2021.
[b.] The numbers of Soldiers with unknown race experiencing these outcomes is less than 10.

Using the data in Table 14, we can calculate simple DIs to determine whether REG disparities exist in the raw data. Doing this, we find that, compared to White Soldiers, Black Soldiers were 1.92 times more likely to be investigated, 1.58 times more likely to go to NJP, and 1.84 times more likely to be referred to CM. Outcome disparities between non-Hispanic and Hispanic Soldiers were much less pronounced than the disparities between Black and White Soldiers. The Hispanic-non-Hispanic DIs are 1.07 for investigation, 0.92 for NJP proceedings, and 0.96 for referral to CM. All these DIs are close to 1.00, indicating that non-Hispanic and Hispanic Soldiers experienced these outcomes at very similar rates. Turning to gender, women in the sample were less likely than men to experience all the first-observed outcomes. The female-

male DIs are all less than 1: 0.71 for investigation, 0.90 for NJP proceedings, and 0.31 for referral to CM.

Regression-adjusted USA outcome disparities

Next, we examine how USA MJS outcomes differed by REG holding the control factors constant and focusing on the following comparisons:

- Race: Black relative to White
- Ethnicity: Hispanic relative to non-Hispanic
- Gender: female relative to male

Odds ratios for observable USA outcomes

Our primary measurement of outcome disparities is ORs estimated with logistic regression models that control for the offender-, incident-, and process-related factors that may be correlated with both REG and the MJS outcome of interest. The estimated ORs for the observable USA MJS outcomes are shown in Table 15.[39] The shading in Table 15 identifies disparities in the five categories defined in the approach section:

- Green ⇒ small disparities or no disparity
- Light red ⇒ mid-sized positive disparities
- Dark red ⇒ large positive disparities
- Light gold ⇒ mid-sized negative disparities
- Dark gold ⇒ large negative disparities

Finally, for each REG group, we also ranked the 37 USA outcomes according to OR size, and the five largest positive disparities are identified in bold font.

The primary result that is immediately visible in the table is that the cells for the first-observed outcomes in the column for Black Soldiers are red, while they are dominantly green in the column for Hispanic Soldiers and gold in the column for female Soldiers. In contrast, the cells for the conditional MJS outcomes are generally green or gold across all three columns. Thus, the largest positive USA MJS disparities are Black-White racial disparities in first-observed outcomes.

[39] See Appendix B for a discussion of the impact of the offender-, incident-, and process-related control factors on measured outcome disparities. Complete output from the 37 final logit models is available upon request.

To interpret the meaning of these results, we consider how the disparities differ by when and where they occur in the MJS process and by whether they are associated with high- or low-discretion outcomes. We focus primarily on positive disparities since that is the focus of the study. In addition, when the results vary by REG group, we discuss each group separately.

Table 15. Odds ratios for modeled USA outcomes[a]

Outcome	Black	Hispanic	Female
Incident processing			
Investigated (total)	2.02***	1.09***	0.63***
Investigated by CID	1.99***	1.11**	0.70***
Investigated by MPI	**2.10*** **	1.04*	0.47***
Joint investigation with external LEA	**2.14*** **	**1.18*** **	0.44***
NJP outcomes by MJS phase, offense, and punishment type			
NJP proceedings (total)	1.70***	0.98**	0.85***
NJP proceedings (drug offenses)	**2.15*** **	0.87***	0.53***
NJP proceedings (sex offenses)	1.74***	**1.29*** **	0.41***
NJP proceedings (other civilian offenses)	1.84***	1.11***	0.72***
NJP proceedings (military-specific offenses)	1.65***	0.97***	0.93***
NJP proceedings (Article 134)	1.35***	1.08***	0.88***
NJP guilty finding	0.93*	1.00	0.82***
NJP imposed (fine)	1.03*	1.05**	0.97
NJP imposed (reduction in rank)	0.98	1.03	0.99
NJP imposed (restriction)	0.92***	1.01	0.86***
NJP imposed (reprimand)	0.92	1.10	**1.19** **
NJP imposed (extra duty)	0.91***	0.98	0.99
NJP imposed (no observed punishment)	0.97	1.02	0.62***
NJP appeal indicated	1.36***	1.01	**1.47*** **
NJP no appeal indicated	0.97**	0.97**	0.93***
CM outcomes by MJS phase, CM type, offense, and punishment type			
Referred to CM (total)	1.90***	**1.14*** **	0.28***
Referred to CM (SCM)	1.84***	0.91	0.44***
Referred to CM (SPCM)	**2.08*** **	0.99	0.50***
Referred to CM (GCM)	1.85***	**1.27*** **	0.14***
Referred to CM (drug offenses)	1.95***	0.89	0.36***
Referred to CM (sex offenses)	1.95***	**1.48*** **	0.02***
Referred to CM (other civilian offenses)	2.02***	1.04	0.30***
Referred to CM (military-specific offenses)	**2.04*** **	1.04	0.37***
Referred to CM (Article 134)	1.63***	0.91	0.27***

Outcome	Black	Hispanic	Female
CM guilty finding	0.79*	0.96	0.54*
CM punishment type (fine)	1.07	0.99	1.03
CM punishment type (reduction in rank)	0.92	1.02	**1.28**
CM punishment type (restriction)	1.03	0.98	**1.25**
CM punishment type (reprimand)	1.37*	0.99	**1.80***
CM punishment type (confinement)	0.93	0.86	0.61
CM punishment type (discharge)	0.95	1.03	0.89
CM punishment type (hard labor)	0.76	0.69*	1.24
CM punishment type (no punishment observed)	1.25	1.04	1.09

Source: CNA calculations using the combined USA MJS-DMDC datasets.
[a] Statistical significance: 1, 5, and 10 percent levels indicated by ***, **, and *, respectively. Shading: green ⇒ OR = 0.9-1.10 or insignificant; light red ⇒ significant OR = 1.11-1.5; dark red ⇒ significant OR > 1.51; light gold ⇒ significant OR= 0.5 to 0.89; dark gold ⇒significant OR < 0.5. Bold indicates five largest positive disparities.

Disparities at specific points in the USA MJS

Determining where the largest disparities exist provides information about potential causes of the disparities and identifies points in the process where policy-makers can focus efforts to eliminate disparities, including efforts to uncover and address any bias that may exist in the system.

Black-White disparities

The estimated racial disparities for unconditional first-observed outcomes are large and positive. Controlling for other factors, Black Soldiers were more likely than White Soldiers to be investigated, go to NJP, and be referred to CM. The ORs for these outcomes are 2.02, 1.70, and 1.90, respectively, and all are statistically significant at the 1 percent level. Turning to conditional MJS outcomes, the ORs associated with guilty findings are small for NJP (0.93) and negative for CM (0.79).

These results are like the USAF results and have the same interpretation. First, Black Soldiers are more likely than White Soldiers to enter the USA MJS, but we cannot observe outcomes in the incident processing phase that would allow us to distinguish between differences in accusation rates and differences in disposition decisions. Second, the fact that Black Soldiers are more likely to be referred to CM, but less likely to be found guilty suggests that something is fundamentally different about the cases being brought against Black and White Soldiers. Combined, these results suggest that Black Soldiers may have been treated differently than White Solders—and may have been subject to bias—during the incident processing phase of the MJS. The fact that Black Soldiers were more likely than White Soldiers to appeal their NJP

decisions (the NJP appeal OR is 1.36 and statistically significant) is consistent with this interpretation.

Finally, conditional on being found guilty at NJP and CM, the Black-White disparities associated with receiving the different punishments are generally small and/or insignificant.

Hispanic-non-Hispanic disparities

Hispanic and non-Hispanic Soldiers experienced the unconditional first-observed outcomes and the conditional MJS outcomes at very similar rates—as previously noted, the entire Hispanic column is predominantly green, indicating that ethnic disparities do not vary across different parts of the USA MJS.

Female-male disparities

The estimated gender disparities for unconditional first-observed outcomes were generally negative—medium and negative for NJP outcomes and large and negative for CM outcomes.

The gender disparities for the conditional MJS outcomes, in contrast, were more varied. Although female Soldiers were less likely than male Soldiers to go to NJP or be referred to CM, conditional on doing so, they were also less likely to be found guilty. Thus, there appears to be something different about the cases brought against women and men in both these MJS forums. Within this context, the fact that, like Black Soldiers, female Soldiers were more likely to appeal their NJP outcomes provides further evidence that women may have been treated differently in the NJP process.

High- and low-discretion USA disparities

Next, we consider whether the measured disparities reported in Table 15 vary according to the hypothesized level of discretion associated with the outcome. If there is unfavorable REG bias in the MJS, we would expect to see greater positive disparities for outcomes that result from higher levels of either institutional or individual discretion. Therefore, we focus on how significant positive disparities vary across the relatively high- and relatively low-discretion outcomes we identified using the guiding framework:[40]

- MJS forum
  - Higher discretion: NJP and SCM

[40] Although we can observe differences in the odds associated with different types of professional (i.e., non-command) USA investigations, we do not evaluate discretion-related disparities according to these outcomes for two reasons. First, we have no hypothesis to distinguish between discretion associated with the three types of investigations identified in the data. Second, the observed investigation outcomes cannot be associated with any NJP or CM outcomes.

  - Lower discretion: SPCM and GCM
- Offense type
  - Higher discretion: military-specific offenses
  - Lower discretion: drug- and sex-related offenses

Black-White disparities

Starting with MJS forum, there is a slight discretion-related disparity pattern. The ORs for lower discretion SPCMs and GCMs—2.08 and 1.85, respectively—are higher than the ORs for the higher discretion Article 15s and SCMs—1.70 and 1.84, respectively. Thus, there is no evidence of bias based on this indicator.

Turning to offense type, the disparities for guilty at NJP are larger for lower discretion offenses. Specifically, the ORs for drug- and sex-related offenses are 2.15 and 1.74, respectively, compared to 1.65 for military-specific offenses and 1.74 for Article 34 offenses. The offense-specific disparities for tried by CM, however, show a different pattern: the OR for higher discretion military-specific offenses is 2.04 compared to ORs of 1.95 for lower discretion drug- and sex-related offenses. The lower OR of 1.63 for Article 134 offenses complicates the story.

Overall, these results provide no specific evidence of discretion-related racial bias in the USA MJS.

Hispanic-non-Hispanic disparities

We look at discretion-related disparities a little differently for ethnicity because there are so few positive ethnic disparities. Of the few that were estimated, the two largest are the ORs of 1.29 and 1.48 for going to NJP and referral to CM for sex-related offenses. Consistent with the latter OR, the Hispanic-non-Hispanic OR for referral to GCM is high—1.27. These results could indicate that Hispanic Soldiers are more likely to commit sex-related offenses or that they are more likely to be accused of committing sex-related offenses (whether they commit the offenses or not), or both. These disparities are sufficiently different from the other ethnic disparities that they merit additional investigation by USA leadership.

Female-male disparities

The measured gender disparities show a discretion-related pattern: the gender disparities are larger (i.e., the ORs are farther from 1) for the lower discretion outcomes. For example, the female OR for referral to GCMs is lower than the ORs for referral to SCM and SPCM, which are, in turn, lower than the OR for going to NJP. Similarly, the female ORs for drug- and sex-related offenses are lower than the ORs for other offenses. These results are a little difficult to interpret given that women are less likely than men to experience all these outcomes, but they suggest that gender bias is not a factor.

USA conclusions

Data assessment

The USA data extracts included the individual and case IDs needed to create the I-C records required to do analysis, but the fact that each data system uses different case IDs means that cases cannot be tracked across systems.

Although the data were generally usable, there were issues with missing dates in the MJO CM extract, which meant that over 2,200 of the unique I-C records could not be matched to the ADMF and had to be dropped from the analysis. In addition, because of the ways that variables were defined and data fields were populated, we could not always distinguish between records with missing information and those that were intentionally not filled in because the variable was not applicable for the case or situation.

Finally, the data we received supported analyzing most of the outcomes we included in our data request. There were gaps, however, at the beginning and the end of the MJS process. At the end of the process, the MJO extracts did not include information about appeals of CM outcomes. Of course, we must acknowledge that we could have used the ACMIS data for information on SPCM and GCM appeals, but this was not possible once we decided to focus on MJO data rather than ACMIS data to be able to include SCM results and information for cases that did not ultimately go to trial. More importantly, we received little information about outcomes that occur in the incident processing phase, especially regarding initial accusations and initial dispositions, and in the pre-hearing/pre-trial phase, especially involving decisions or outcomes that resulted in a case not going forward along the initial disposition path (either NJP or CM). This means that we are missing key interim outcomes on which later outcomes should be conditioned.

REG disparities

Even after controlling for other factors, there were significant racial and gender disparities in USA MJS outcomes. The Black-White disparities for unconditional first-observed outcomes were large and positive—Black Soldiers were more likely than White Soldiers to be investigated, go to NJP, and be referred to CM (overall and for all offense and CM types). In contrast, the gender disparities for unconditional first-observed outcomes were large and negative—female Soldiers were less likely than male Soldiers to experience these outcomes.

The data do not allow us to observe outcomes in the incident processing and pre-hearing/pre-trial phases of the USA MJS, so we cannot tell whether the racial and gender disparities associated with the unconditional first-observed outcomes (i.e., investigation, going to NJP, and

being referred to CM) arose at the point of initial accusation or at the initial disposition decision.

Turning to the conditional MJS outcomes, the data show that, conditional on being tried by CM, the measured racial and gender disparities for being found guilty were negative—Black and female Soldiers were less likely than White and male Soldiers, respectively, to be found guilty at CM. These results suggest that there was something different about the cases brought against members of these groups. For example, the results are consistent with a scenario in which the cases brought against Black and female Soldiers were weaker than the cases brought against White and male Soldiers, respectively. Similarly, conditional on being found guilty at NJP, Black and female Soldiers were more likely to appeal their NJP findings, which suggests that they may have been treated differently in the NJP process.

Finally, the estimated ethnic disparities were generally small or insignificant—Hispanic Soldiers experienced most of the modeled outcomes at roughly the same rates as non-Hispanic Soldiers. Also, with a few exceptions conditional on being found guilty at NJP or CM, members of all REG groups were generally equally likely to experience the different types of punishments.

Combined these results indicate that data for outcomes that occur during the incident processing and pre-trial/pre-hearing phases of the USA MJS must be collected and analyzed to better understand and eliminate the observed positive racial disparities. A good starting place would be evaluating the initial disposition decisions of USA commanders and studying the strength of CM cases against Black Soldiers relative to that of cases against White Soldiers.

Analysis and Results: Marine Corps

This section describes the data, analysis, and results for the USMC. It also includes our interpretations of the analytical results and the conclusions we draw from them.

USMC data sources

The sources of the MJS data provided by the USMC are identified in Table 16. For each data source, the table shows the data system name and the types of information it includes, plus the years covered by, and the number of unique I-C records contained in, the submitted extracts.

Table 16. USMC data sources

Data system	Included information	Fiscal years	I-C records
Consolidated Law Enforcement Operation Center (CLEOC)	Closed NCIS investigations of regular, active duty USMC personnel	2013-21	17,111
Total Force Data Warehouse (TFDW) Legal Action File	Records of USMC military personnel subject to NJP by fiscal year	2013-21	69,981
Wolverine/Case Management System (CMS)	CM cases opened by USMC legal services support sections/teams	2013-21	9,058

Source: CNA.

Consolidated Law Enforcement Operation Center (CLEOC)

CLEOC is a web-enabled reporting program used by the Department of the Navy (DON) law enforcement community to record investigative data for four categories of criminal offenses: fraud, property crimes, crimes against persons (e.g., assault, robbery, and homicide), and sex-related crimes. Types of records captured in CLEOC include information about the offense, the subject, and any victims or witnesses, as well as investigative findings. CLEOC was introduced in 2005 to satisfy various reporting requirements, including requirements to provide input to the Defense Incident-Based Reporting System (DIBRS).[41] The data also support the analysis program for the Naval Criminal Investigative Service (NCIS) [28].

[41] See the companion *How To* document [2] for DIBRS reporting requirements and how they relate to this study.

The USMC extracts provided for the study include records of closed NCIS investigations of regular, active duty USMC personnel that were reported in FY 2013 through 2021.

Total Force Data Warehouse (TFDW) Legal Action Table

The TFDW is the historical personnel database for the USMC, and the Legal Action Table tracks individuals who are the subjects of adjudicated legal actions—NJPs and CMs—over the course of their careers, with records indicating the date on which the action occurred. The extract provided for this study includes active duty USMC officers and enlisted personnel who were subject to legal action in FY 2013 through FY 2021, and we used it to identify those with records of adjudicated NJP actions.

Wolverine/Case Management System (CMS)

The current data system for the DON legal community is Wolverine. It was introduced in late FY 2020 as a bridge between the legacy system, CMS, and a new system called, the Naval Court-Martial Reporting System (NCORS), that is still being developed [15]. CMS came online for the USMC in 2010, but it was designed as a case-tracking system, rather than a data management system, and has been determined inadequate for current needs [29]. NCORS, in contrast, will be a cloud-hosted, highly configurable system that will support case management as well as efficient data collection, reporting, and analysis in accordance with the MJA 2016 and the supporting data collection standards issued by DOD in 2018.[42] According to the FY 2021 USN annual report to Congress [15], NCORS should be operational after a nine-month pilot phase that was expected to start in March 2022. The USN annual report also notes, however, that the NCORS funding request for FY 2023 was denied and funding shortfalls are expected throughout the Future Year Defense Program (FYDP). In the meantime, Wolverine is designed to enable compliance with the new reporting requirements.[43]

[42] See references [2] and [12] for more information about the reporting requirements and the 2018 Uniform Standards and Criteria Required by Article 140a.

[43] To highlight the data and funding issues for the DON legal community, we provide the following excerpts from the 2019 *Comprehensive Review of the Department of the Navy's Uniformed Legal Communities* [29]:

> The respective legal communities have been under-resourced. This must be corrected. The military justice data collection, case management, and court reporting systems currently employed by the Navy and Marine Corps are inefficient, and in some respects, ineffective. Additionally, they fail to meet Congressional requirements defined in the Military Justice Act (MJA) of 2016. ([29], page 6)
>
> The DON legal community lacks modern, effective systems to simplify and streamline military justice data collection, case management, and court reporting. Modern systems are essential to improve DON military justice system efficiency, mitigate the risks of legal errors, deliver accurate and informative responses to requests for data, and enable effective trend analysis. The Panel recommends that SECNAV immediately

The data file we received for this study covered USMC CM cases opened by a legal services support team (LSST) in response to charges preferred between FY 2013 through FY 2021.

USMC data assessment

We assessed the quality of the USMC data extracts according to the usability and completeness criteria listed in the description of our approach to data assessment. The data samples described here do not match the final samples used for analysis, which include only regular active duty enlisted personnel and data from FY 2014 through FY 2020.

Usability: Individual IDs

Since some individuals are associated with more than one case and some cases include multiple individuals, it is necessary to create unique I-C records as the unit of observation. Table 17 shows how we created the unique records for each USMC dataset.

Table 17. Creating I-C records in the USMC datasets and the impact of missing IDs

Record type	CLEOCS[a]	TFDW[b]	Wolverine/CMS[c]
Total records[d]	27,609	69,981	33,097
Unique records			
Individuals	15,160	56,576	6,184
Cases	14,445	69,981	9,058
I-C records	17,111	69,981	9,058
Missing IDs			
Total records	16	0	5,198
I-C records	11	0	2,356
I-C records with IDs			
Counts	17,100	69,981	6,702
Share of total	100%	100%	74%

Source: CNA.
[a] The CLEOCS extract includes NCIS investigations of regular, active duty USMC personnel.
[b] The TFDW extract includes records of USMC personnel subject to adjudicated NJP actions.
[c] The Wolverine/CMS extract includes records of USMC CM cases opened in response to preferred charges.
[d] These records reflect all submitted data; they do not reflect various data-cleaning steps used to create the final analytical samples.

resource the expedited acquisition of modern, secure commercial-off-the-shelf systems that are compliant with statute and Department of Defense (DoD) requirements and coordinate with DON Chief Information Officer to expedite implementation. ([29], page 10)

The data in Table 17 show that the Wolverine/CMS file for CMs is the only USMC extract for which a substantial number of individual IDs is missing. Specifically, 15 percent of all records are missing individual IDs, which translates to missing individual IDs for 26 percent of unique I-C records. Most of the missing IDs are in records from FY 2013 and FY 2014, which is consistent with initial input from the USMC providers indicating that individual IDs were not a required data element when CMS was first designed. Since records without individual IDs could not be matched to the ADMF, these records were excluded from the sample used for disparity analysis. It is possible that dropping these records from the analysis biases our results.[44]

Usability: Case IDs

Each USMC data system uses different case IDs, so we could not readily merge records across data systems. First, since the NJP data come from the TFDW—a personnel database, not an MJS database—these data have no case ID at all. (We used the legal action date to create the I-C records for NJP.) The NCIS extract from CLEOC has a 23-character CCN. The CM dataset from Wolverine/CMS has both an 8-character case ID number and a CCN with the same structure as the CLEOC CCN. The Wolverine/CMS CCN is, however, blank in 90 percent of the records, so it could not be used to merge the NCIS and CM data.

Usability: Data structure

In general, the formats of the USMC data were readily usable. The exception was that case findings and punishments in the Wolverine/CMS data were not provided by charge; instead, within an I-C case record, the sentence values were the same across all offense rows.

Completeness for analyzing MJS outcomes

Next, we assess the completeness of the USMC data relative to our request for information about important MJS outcomes identified in the guiding framework. Specifically, Table 18 lists the outcome variables we requested and shows whether they were provided in the CLEOC, TFDW, and Wolverine/CMS data extracts. The entries in Table 18 are yes/no to indicate whether an outcome variable was provided and N/A to indicate that an outcome variable is outside the purview of the specified data system. Other entries are used to provide specific information about the data provided.

[44] We expect that the effects on estimated gender and Black-White disparities are relatively small, but for different reasons: for gender, the male female-mix of the dropped records is close to that of the kept records; for race, the dropped records were disproportionately in the Other race category. In contrast, we cannot tell what the effect on ethnic disparities might be because ethnicity was unknown in 85 percent of the dropped records.

Table 18. Requested outcome variables included in data submitted by USMC providers

Requested outcome	CLEOC	TFDW	CMS/Wolverine
Investigation			
Military LEA indicator	**NCIS**	-N/A-	NCIS indicator: 99% blank
Military LEA ID			
Multiple civilian LEA indicators	No		No
Disposition			
Punishment below NJP	-N/A-	No	-N/A-
NJP offered		No	
CM type		-N/A-	**Case opened / Case referred**[a]
Nonjudicial Punishment (NJP)			
NJP accepted	-N/A-	No	CM from NJP refusal[b]
NJP outcome		**NJP was adjudicated**	-N/A-
NJP outcome appealed		No	
NJP appeal result		No	
Court-martial (CM)			
Pre-trial confinement	-N/A-	-N/A-	**Yes**
Plea offer			No
Terms of nth plea deal			No
Acceptance of plea offer			**Yes**
Other non-CM resolution			**Alternate disposition**
Proceed to CM			**Trial date**[a]
CM type			**Yes**
Number of judges			**Yes**
CM verdict			**Yes**
CM sentence			**Yes**
Appeal indicator			Appeal activity: 100% blank
Result of appeal			No

Source: CNA.
[a] The Wolverine/CMS extract includes all cases opened by LSSTs based on the charge preferral date; we distinguish between cases with charges preferred, that are referred to CM, and that proceed to CM using preferral, referral, and trial dates, respectively.
[b] The Wolverine/CMS extract includes a variable indicating that the case was the result of an NJP refusal, but it was not consistently populated.

The table shows that the CLEOC data allow us to observe only whether a Marine was investigated by NCIS. Similarly, the TFDW NJP data only identify Marines who were subject to

an adjudicated NJP action. This provides very little visibility into actions that occur during the incident processing phase for cases that are not initially disposed of by referral to CM.

Turning to the Wolverine/CMS data on CMs, the provided extract includes information on nearly all the outcomes we requested. In particular, the extract includes well populated variables for preferral, referral, and trial dates, which allow us to observe the key steps a case can take between an initial CM disposition and proceeding to trial. The Wolverine/CMS extract also includes an alternate disposition variable that provides information about why a case that is referred to CM does not proceed to trial. It was not within the scope of this study to analyze REG disparities in the different alternate disposition outcomes but doing so could provide valuable insight into Marines' experiences during the pre-trial phase.

Taken together, the USMC MJS data provided for this study left the following gaps in our ability to track cases across all phases and steps along the MJS paths:

- Incident processing
  - Entry into the MJS: We cannot observe all Marines who are accused of disciplinary or criminal offenses; we can only see Marines who are investigated by NCIS or whose cases are initially disposed of by referral to CM.
  - Disposition: We can observe ex post disposition decisions that resulted in a case starting down the CM path, but we do not know ex ante how these cases entered the MJS, and we cannot observe the disposition decisions that sent a case down the NJP path.
- NJP: We cannot observe anything before the imposition of punishment, nor can we observe the punishment that was imposed. Thus, we are missing all steps in the pre-hearing phase and all but the finding step in the adjudication and sentencing phase. In particular, we cannot observe cases in which a punishment was not imposed (e.g., cases that were dismissed or that resulted in a not guilty finding).

USMC analytical samples

Next, we provide selected descriptive statistics for the combined MJS-DMDC analytical samples for each USMC data source, focusing on the data elements that are most important for understanding the analysis of outcome disparities.

MJS outcomes analyzed for the USMC

Table 19 lists the MJS outcomes we could analyze using the USMC data and the associated comparison populations that form the basis of the disparity calculations. Identifying the comparison populations highlights which outcomes are *unconditional* first-observed outcomes

(i.e., those for which the comparison population is all Marines) and which are *conditional* MJS outcomes (i.e., those for which the comparison populations come from the MJS data).[45]

Table 19. MJS outcomes analyzed for the USMC

Requested outcome	Analyzed outcome	Comparison population
Investigation		
Military LEA indicator	Investigated by NCIS	All Marines
NJP		
NJP outcome	NJP guilty finding	All Marines
CM		
CM type	Case opened by an LSST (Overall, by CM type, & by offense type)	All Marines
CM type	Case referred to CM	Those with preferral dates
Acceptance of plea offer	CM pre-trial agreement	Those with preferral dates
Proceed to CM	Tried by CM	Those with referral dates
CM finding	CM guilty finding	Those with CM verdicts
CM sentence	CM punishment type	Those with guilty findings

Source: CNA.

Sample sizes and percentages for first-observed outcomes

Table 20 reports counts and percentages for the first-observed outcomes from the final USMC samples. The first column in the table lists the REG groups of interest in this study. The second and third columns show, overall and for each REG group, the number and percentage of Marines in the ADMF sample for FY 2014 through FY 2020: 81.2 percent of the sample is White, 10.9 percent of the sample is Black, 21.2 percent of the sample is Hispanic, and 8.8 percent of the sample is female.

The fourth and fifth columns show the total number and the percentage of each REG group who were investigated by NCIS. The sixth and seventh columns display the same information for those who were found guilty at NJP and had a punishment imposed, and the eighth and ninth columns display the information for those for whom preferred charges resulted in a case being opened by an LSST. The data show that 3.2 percent of Marines were investigated by NCIS, 10.9 percent were found guilty at NJP and had a punishment imposed, and 1.4 percent were subjects of an opened LSST CM case.

[45] Recall that models of conditional MJS outcomes include offense types and counts as explanatory variables.

Table 20. Sample sizes and percentages for all Marines and first-observed outcomes

REG group	All Marines		Investigated by NCIS		NJP guilty finding		CM case opened	
	Count	% of total	Count	% with outcome	Count	% with outcome	Count	% with outcome
All	370,738	100.0	11,802	3.2	40,350	10.9	5,331	1.4
White	300,874	81.2	8,584	2.9	31,419	10.4	3,843	1.3
Black	40,520	10.9	2,308	5.7	6,249	15.4	1,040	2.6
Other	22,235	6.0	662	3.0	2,220	10.0	318	1.4
Unknown	7,109	1.9	248	3.5	462	6.5	130	1.8
Non-Hispanic	292,190	78.8	9,369	3.2	31,607	10.8	4,271	1.5
Hispanic	78,546	21.2	2,433	3.1	8,743	11.1	1,060	1.4
Unknown	2	0.0	0	0.0	0	0.0	0	0
Male	338,199	91.2	11,276	3.3	37,458	11.1	5,088	1.5
Female	32,539	8.8	526	1.6	2,892	8.9	243	0.8

Source: CNA.

Using the data in Table 20, we can calculate simple DIs to determine whether REG disparities exist in the raw data. Doing this, we find that, compared to White Marines, Black Marines were 2.0 times more likely to be investigated by NCIS, 1.48 times more likely to be found guilty at NJP and have a punishment imposed, and 1.97 times more likely to be the subject of an opened CM case. Outcome disparities between non-Hispanic and Hispanic Marines were much less pronounced than the disparities between Black and White Marines. The Hispanic-non-Hispanic DIs are 0.97 for NCIS investigations, 1.03 for NJP guilty findings and punishment, and proceedings, and 0.92 for opened CM cases. Turning to gender, women in the sample were less likely than men to experience all the first-observed outcomes. The female-male DIs are all less than 1: 0.49 for NCIS investigations, 0.80 for NJP punishments, and 0.47 for opened CM cases.

Regression-adjusted USMC outcome disparities

Next, we examine how USMC MJS outcomes differed by REG, holding the control factors constant and focusing on the following comparisons:

- Race: Black relative to White
- Ethnicity: Hispanic relative to non-Hispanic

- Gender: female relative to male

Odds ratios for observable USMC outcomes

Our primary measurement of outcome disparities is ORs estimated with logistic regression models that control for the offender-, incident-, and process-related factors that may be correlated with both REG and the MJS outcome of interest. The estimated ORs for the observable USMC MJS outcomes are shown in Table 21.[46] The shading in Table 21 identifies disparities in the five categories defined in the approach section:

- Green ⇒ small disparities or no disparity
- Light red ⇒ mid-sized positive disparities
- Dark red ⇒ large positive disparities
- Light gold ⇒ mid-sized negative disparities
- Dark gold ⇒ large negative disparities

Finally, for each REG group, we also ranked the 21 USMC outcomes according to OR size, and the five largest positive disparities are identified in bold font.

The primary result that is immediately visible in the table is that the cells for the first-observed outcomes in the column for Black Marines are red, while they are dominantly green in the column for Hispanic Marines and gold in the column for female Marines. In contrast, the cells for the conditional MJS outcomes are generally green or gold across all three columns. Thus, the largest positive USMC MJS disparities are Black-White racial disparities in first-observed outcomes.

To interpret the meaning of these results, we consider how the disparities differ by when and where they occur in the MJS process and by whether they are associated with high- or low-discretion outcomes. We focus primarily on positive disparities since that is the focus of the study. In addition, when the results vary by REG group, we discuss each group separately.

Disparities at specific points in the USMC MJS

Determining where the largest disparities exist provides information about potential causes of the disparities and identifies points in the process where policy-makers can focus efforts to eliminate disparities, including efforts to uncover and address any bias that may exist in the system.

[46] See Appendix B for a discussion of the impact of the offender-, incident-, and process-related control factors on measured outcome disparities. Complete output from the 21 final logit models is available upon request.

Since there was little variation in the ethnic disparities at different points in the USMC MJS, we focus on racial disparities and gender disparities.

Table 21. Odds ratios for modeled USMC outcomes[a]

Outcome	Black	Hispanic	Female
Incident processing			
Investigated by NCIS	**1.98*** **	1.06*	0.45***
NJP outcomes by MJS phase, offense, and punishment type			
NJP guilty finding	1.54***	1.05***	0.81***
CM outcomes by MJS phase, CM type, offense, and punishment type			
CM case opened (total)	**1.82*** **	1.01	0.49***
CM case opened (SCM)	1.36***	0.83*	0.38***
CM case opened (SPCM)	**2.03*** **	1.03	0.65***
CM case opened (GCM)	1.76***	**1.26*** **	0.12***
CM case opened (drug offenses)	**2.09*** **	0.78**	0.56*
CM case opened (sex offenses)	1.56***	**1.28***	0.07***
CM case opened (other civilian offenses)	**1.82*** **	1.09	0.34***
CM case opened (military-specific offenses)	1.62***	1.02	0.52***
Referred to CM	0.89	1.06	**1.03**
Pre-trial plea agreement	0.86	0.97	0.72
Tried by CM	0.99	1.05	0.48***
CM guilty finding	0.99	**1.30**	0.38**
CM punishment type (fine)	0.88	1.05	**1.28**
CM punishment type (reduction in rank)	0.93	1.08	0.68
CM punishment type (restriction)	0.83	0.84	0.61
CM punishment type (reprimand)	1.45	1.06	**1.35**
CM punishment type (confinement)	0.94	**1.14**	0.56*
CM punishment type (discharge)	0.90	**1.26**	0.49*
CM punishment type (hard labor)	0.94	0.94	**2.09**

Source: CNA calculations using the combined DMDC-USMC MJS datasets.
[a] Statistical significance: 1, 5, and 10 percent levels indicated by ***, **, and *, respectively. Shading: green ⇒ OR = 0.9-1.1 or insignificant; light red ⇒ significant OR = 1.11-1.5; dark red ⇒ significant OR > 1.51; light gold ⇒ significant OR= 0.5 to 0.89; dark gold ⇒significant OR < 0.5. Bold indicates five largest positive disparities.

Black-White disparities

The estimated racial disparities for unconditional first-observed outcomes are large and positive. Controlling for other factors, Black Marines were more likely than White Marines to be investigated by NCIS, found guilty at NJP, and have CM cases opened. The ORs for these

outcomes are 1.98, 1.54, and 1.82, respectively, and all are statistically significant at the 1 percent level.

We cannot observe any conditional outcomes on the NJP path of the USMC MJS. In particular, since we do not observe any intermediate outcomes before being found guilty at NJP, we cannot pinpoint where this disparity truly arose in the NJP process. Recalling the hypothetical examples of conditional and unconditional outcomes from Table 1, the estimated OR for this outcome could be measuring a disparity at the NJP guilty finding point or it could be picking up disparities that occurred earlier—either at the point of initial accusation or at the disposition decision.

We do, however, observe conditional outcomes on the CM path. The data allow us to observe opened cases, referred cases, and tried cases, and the estimated ORs show that there was a positive racial disparity for opened cases, but no estimated disparities for any of the later outcomes. The conditional ORs for having an opened case referred to CM, reaching a plea agreement, being tried by CM, and being found guilty range from 0.86 to 0.99 and all are statistically insignificant. Similarly, conditional on being found guilty at CM, the Black-White disparities associated with receiving the different punishments are all small and/or insignificant.

These results suggest that, if bias does exist in the USMC MJS process it is most likely to exist in the incident processing phase—either at accusation, investigation, or initial disposition.

Female-male disparities

The estimated gender disparities for unconditional first-observed outcomes are negative. Controlling for other factors, female Marines were less likely than male Marines to be investigated by NCIS, found guilty at NJP, and have CM cases opened. The ORs for these outcomes are 0.45, 0.81, and 0.49, respectively, and all are statistically significant at the 1 percent level.

Some of the gender disparities for the conditional MJS outcomes were also negative. In particular, conditional on having a case referred to CM, female Marines were less likely than male Marines to be tried by CM, and conditional on being tried, female Marines were less likely to be found guilty. The ORs for these conditional outcomes are 0.48 and 0.38, respectively, and both are significant at the 1 percent level. Thus, there appears to be something different about the CM cases brought against male versus female Marines.

Finally, conditional on being found guilty at CM, the gender disparities associated with receiving the different punishments are generally small and/or insignificant. The two exceptions are that female Marines were less likely than male Marines to receive confinement or discharge punishments.

High- and low-discretion USMC disparities

Next, we consider whether the measured disparities reported in Table 21 vary according to the level of discretion associated with the outcome. If there is unfavorable REG bias in the MJS, we would expect to see greater positive disparities for outcomes that result from higher levels of either institutional or individual discretion. Therefore, we focus on how significant positive disparities vary across the relatively high- and relatively low-discretion outcomes we identified using the guiding framework and can observe in the USMC data:[47]

- MJS forum
  - Higher discretion: NJP and SCM
  - Lower discretion: SPCM and GCM
- Offense type
  - Higher discretion: military-specific offenses
  - Lower discretion: drug- and sex-related offenses

Since there were no positive gender disparities, we focus on racial and ethnic disparities.

Black-White disparities

Starting with MJS forum, the discretion-related pattern does not indicate the presence of bias in the USMC MJS: the ORs for the lower discretion forums, SPCM (OR equal 2.03) and GCM (OR equal to 1.76) are larger than for the higher discretion forums, NJP (OR equal to 1.54) and SCM (OR equal to 1.36). Turning to CM offense type, there is no strong discretion-related disparity pattern for OR magnitudes. The ORs for the lower discretion drug- and sex-related offenses are 2.09 and 1.56, respectively. The OR for military-specific offenses, the higher discretion outcome, falls in between at 1.62. Overall, these results provide no specific evidence of racial bias in the USMC MJS.

Hispanic-non-Hispanic disparities

We look at discretion-related disparities a little differently for ethnicity because there are so few positive ethnic disparities. The two that were estimated were ORs of 1.26 for being the subject of an opened GCM case and 1.28 for being the subject of a case for a sex-related offense. These results could indicate that Hispanic Marines are more likely to commit sex-related offenses or that they are more likely to be accused of committing sex-related offenses (whether they commit the offenses or not), or both. These disparities are sufficiently different from the other ethnic disparities that we think they merit additional investigation by USMC leadership.

[47] The USMC data do not allow us to observe disparity differences by investigation type.

USMC conclusions

Data assessment

The USMC data extracts included the individual and case IDs needed to create the I-C records required to do analysis. In addition, the CLEOC and Wolverine/CMS extracts include common CCNs that should allow data from the two systems to be merged for analysis. The CCN fields were, however, generally blank in the Wolverine/CMS records, so we could not track cases across systems. In addition, although the data were generally usable, issues with missing individual IDs in the Wolverine/CMS extract meant that more than 2,300 records had to be dropped from the CM analysis.

The data we received supported analyzing most of the CM-related outcomes we included in our data request. In particular, we could identify cases that were referred to CM, but did not go to trial. There were, however, gaps at the end of the CM process (the data did not include information on appeals) and for most of the NJP-related outcomes, which are far more frequent than the CM outcomes. In addition, for both disciplinary and judicial outcomes, we received very little information about outcomes that occur in the incident processing phase, especially regarding initial accusations and investigations. This means that we are missing key interim outcomes on which later outcomes should be conditioned.

REG disparities

Even after controlling for other factors, there are significant racial and gender disparities in USMC MJS outcomes. The estimated Black-White disparities are positive and associated with first-observed outcomes. Black Marines were more likely than White Marines to be investigated by NCIS, have NJPs imposed, and be the subjects of CM cases opened by LSSTs—overall and for all offense and CM types. The female-male disparities are negative and occur for outcomes at all observed steps on the MJS paths except punishment type following a guilty CM finding.

The data do not allow us to observe outcomes in the incident processing phase of the USMC MJS, so we cannot tell whether the racial and gender disparities associated with the unconditional first-observed outcomes arose at the point of initial accusation or at the initial disposition decision.

Turning to the conditional USMC MJS outcomes, although the data show that there is a positive racial disparity for opened cases, there are no estimated disparities for any later outcomes. This suggests that if racial bias does exist in the USMC MJS process it is most likely to exist in the incident processing phase—either at accusation, investigation, or initial disposition.

The data also show that, conditional on being referred to CM, female Marines were less likely than male Marines to be tried, and conditional on being tried by CM, female Marines were less likely than male Marines to be found guilty at CM. These results suggest that there was something different about the cases brought against women and men.

Finally, the estimated ethnic disparities were consistently small or insignificant—Hispanic Marines experienced nearly all the modeled outcomes at roughly the same rates as non-Hispanic Marines.

Combined these results indicate that data for NJP outcomes and outcomes that occur during the incident processing phase of the USMC MJS must be collected and analyzed to better understand and eliminate the observed positive racial disparities.

Analysis and Results: Navy

This section describes the data, analysis, and results for the USN. It also includes our interpretations of the analytical results and the conclusions we draw from them.

USN data sources

The sources of the MJS data provided by the USN are identified in Table 22. For each data source, the table shows the data system name and the types of information it includes, plus the years covered by and the number of unique I-C records contained in the submitted extracts. The USN sources for investigation and CM data are the same as the USMC sources. We repeat the USMC descriptions of the CLEOC and Wolverine/CMS data for readers' convenience.

Table 22. USN data sources

Data system	Included information	Fiscal years	I-C records
Consolidated Law Enforcement Operation Center (CLEOC)	Closed NCIS investigations of regular, active duty USN personnel	2013-21	27,407
Quarterly Crime Activity Report (QCAR)	Completed USN NJPs	2021	4,920
Wolverine/Case Management System (CMS)	CM cases opened by USN regional legal services offices	2014-21	14,237

Source: CNA.

Consolidated Law Enforcement Operation Center (CLEOC)

CLEOC is a web-enabled reporting program used by the DON law enforcement community to record investigative data for four categories of criminal offenses: fraud, property crimes, crimes against persons (e.g., assault, robbery, and homicide), and sex-related crimes. Types of records captured in CLEOC include information about the offense, the subject, and any victims or witnesses, as well as investigative findings. CLEOC was introduced in 2005 to satisfy various

reporting requirements, including DIBRS requirements.[48] The data also support the NCIS analysis program [28].

The USN extracts provided for the study include records of closed NCIS investigations of regular, active duty USN personnel that were reported in FY 2013 through 2021.

Quarterly Crime Activity Report (QCAR)

Introduced in FY 2021, QCAR is the new DON system for storing information related to not only NJPs completed in each command, but also SCMs that are conducted without the involvement of a USN regional legal services office (or USMC legal services support section). Specifically, within 30 days of the end of each quarter, each CM convening authority and NJP authority must report the results of every SCM and NJP conducted in the previous quarter to the first GCM convening authority in the administrative chain of command. The information to be reported includes demographic characteristics of the accused and any victims, the date of the SCM or NJP, the UCMJ punitive article that has been violated, the result of the case, and the punishment imposed. The purposes of collecting these data are to fulfill statutory reporting requirements, provide timely information to support analysis of criminal activity, and measure the efficiency and effectiveness of discipline-related initiatives [30].

The QCAR file that was submitted for this study included USN NJPs completed in FY 2021. Because we received only one year's worth of data, we do not use the QCAR data in our disparity analysis. We do, however, cover it in our data assessment.

Wolverine/Case Management System (CMS)

The current data system for the DON legal community is Wolverine. It was introduced in late FY 2020 as a bridge between the legacy system, CMS, and a new system called the Naval Court-Martial Reporting System (NCORS) that is still being developed [15]. CMS came online for the USN in 2014, but it was designed as a case-tracking system, rather than a data management system, and has been determined inadequate for current needs [29]. NCORS, in contrast, will be a cloud-hosted, highly configurable system that will support case management as well as efficient data collection, reporting, and analysis in accordance with the MJA 2016 and the supporting data collection standards issued by DOD in 2018.[49] According to the FY 2021 USN annual report to Congress [15], NCORS should be operational after a nine-month pilot phase that was expected to start in March 2022. The USN annual report also notes, however, that the NCORS funding request for FY 2023 was denied and funding shortfalls are expected throughout

[48] See the companion *How To* document [2] for DIBRS reporting requirements and how they relate to this study.

[49] See references [2] and [12] for more information about the reporting requirements and the 2018 Uniform Standards and Criteria Required by Article 140a.

the FYDP. In the meantime, Wolverine is designed to enable compliance with the new reporting requirements.[50]

The data file we received for this study covered USN CM cases opened by regional legal services offices (RLSOs) in response to charges preferred between FY 2013 through FY 2021.

USN data assessment

We assessed the quality of the USN data extracts according to the usability and completeness criteria listed in the description of our approach to data assessment. The data samples described here do not match the final samples used for analysis, which include only regular, active duty enlisted personnel and data from FY 2014 through FY 2020.

Usability: Individual IDs

Since some individuals are associated with more than one case and some cases include multiple individuals, it is necessary to create unique I-C records as the unit of observation. Table 23 shows how we created the unique records for each USN dataset. The entries show that none of the USN datasets was substantially affected by missing individual IDs.[51]

Usability: Case IDs

Each USN data system uses different case IDs, so we could not readily merge records across data systems. First, QCAR does not include any case ID. We used the date of the NJP to create the I-C records in the QCAR data. Moving to the other data sources, as described in the USMC section, the NCIS dataset from CLEOC has a 23-character CCN, while the CM dataset from Wolverine/CMS has both an 8-character case ID number and a CCN with the same structure as the CCN in the CLEOC dataset. The Wolverine/CMS CCN was, however, blank in 94 percent of the USN records, so it could not be used to merge the NCIS and CM data.

Usability: Data structure

In general, the formats of the USN data were readily usable. The exception was that case findings and punishments in the Wolverine/CMS data were not provided by charge; instead, within an I-C case record, the sentence values were the same across all offense rows.

[50] See the USMC section for findings and recommendations related to DON data systems from the 2019 *Comprehensive Review of the Department of the Navy's Uniformed Legal Communities* [29].

[51] The USN did not adopt CMS until FY 2014, so the issue with missing IDs in the USMC CMS data is not present in the USN CMS data.

We also noticed that, although many of the QCAR data fields are supposed to be populated via dropdown menus [30], the fact that entries for these variables included multiple formats or spellings for the same value indicates this is probably not the case. The following are examples of inconsistent entries: Navy and USN for branch of service; caucasian, caucasion, white, and white(e) for race; and 1 yr 9 month, 1 yrs 2 mos, 1.5, 10 months, and 10 mos for years of service.

Table 23. Creating I-C records in the USN datasets and the impact of missing IDs

Record type	CLEOCS[a]	QCAR[b]	Wolverine/CMS[c]
Total records[d]	27,407	4,920	14,237
Unique records			
Individuals	16,986	4,273	1,927
Cases	17,252	4,636	2,048
I-C records	19,130	4,636	2,048
Missing IDs			
Total records	43	8	342
I-C records	30	8	46
I-C records with IDs			
Counts	19,100	4,628	2,002
Share of total	100%	100%	98%

Source: CNA.
[a] The CLEOCS extract includes NCIS investigations of regular, active duty USN personnel.
[b] The QCAR extract includes USN NJPs completed in FY 2021.
[c] The Wolverine/CMS extract includes records of USN CM cases opened in response to preferred charges.
[d] These records reflect all submitted data; they do not reflect various data-cleaning steps used to create the final analytical samples.

Completeness for analyzing MJS outcomes

Next, we assess the completeness of the USN data relative to our request for information about important MJS outcomes identified in the guiding framework. Specifically, Table 24 lists the outcome variables we requested and shows whether they were provided in the CLEOC, QCAR, and Wolverine/CMS data extracts. The entries in Table 24 are yes/no to indicate whether an outcome variable was provided and N/A to indicate that an outcome variable is outside the purview of the specified data system. Other entries are used to provide specific information about the data provided.

The table shows that the CLEOC data allow us to observe only whether a Sailor was investigated by NCIS. Similarly, the QCAR extract on NJPs provides information only on the result of the NJP and the punishment imposed. It does not provide any information about whether an NJP was refused or resulted in an administrative rather than punitive action. Thus,

we have very little visibility into actions that occurred during the incident processing phase, especially for cases that are not initially disposed of by referral to CM.

Table 24. Requested outcome variables included in data submitted by USN providers

Requested outcome	CLEOC	QCAR	CMS/Wolverine
Investigation			
Military LEA indicator	**NCIS**	-N/A-	NCIS indicator: 99% blank
Military LEA ID			
Multiple civilian LEA indicators	No		No
Disposition			
Punishment below NJP	-N/A-	No	-N/A-
NJP offered		No	
CM type		-N/A-	**Case opened / Case referred**[a]
Nonjudicial Punishment (NJP)			
NJP accepted	-N/A-	No	CM from NJP refusal[b]
NJP outcome		**Yes**	-N/A-
NJP outcome appealed		No	
NJP appeal result		No	
Court-martial (CM)			
Pre-trial confinement	-N/A-	-N/A-	**Yes**
Plea offer			No
Terms of nth plea deal			No
Acceptance of plea offer			**Yes**
Other non-CM resolution			**Alternate disposition**
Proceed to CM			**Trial date**[a]
CM type			**Yes**
Number of judges			**Yes**
CM verdict			**Yes**
CM sentence			**Yes**
Appeal indicator			Appeal activity: 100% blank
Result of appeal			No

Source: CNA.

[a] The Wolverine/CMS extract includes all cases opened by LSSTs based on the charge preferral date; we distinguish between cases with charges preferred, that are referred to CM, and that proceed to CM using preferral, referral, and trial dates, respectively.

[b] The Wolverine/CMS extract includes a variable indicating that the case was the result of an NJP refusal, but it was not consistently populated.

Turning to the Wolverine/CMS data on CMs, the provided extract includes information on nearly all the outcomes we requested. In particular, the extract includes well populated variables for preferral, referral, and trial dates, which allow us to observe the key steps a case can take between an initial CM disposition and proceeding to trial. The Wolverine/CMS extract also includes an alternate disposition variable that provides information about why a case that is referred to CM does not proceed to trial. It was not within the scope of this study to analyze REG disparities in the different alternate disposition outcomes but doing so could provide valuable insight into Sailors' experiences during the pre-trial phase.

Taken together, the USN MJS data provided for this study left the following gaps in our ability to track cases across all phases and steps along the MJS paths:

- Incident processing
  - Entry into the MJS: We cannot observe all Sailors who are accused of disciplinary or criminal offenses; we can only see Sailors who are investigated by NCIS or whose cases are initially disposed of by referral to CM.
  - Disposition: We can observe ex post disposition decisions that resulted in a case starting down the CM path, but we do not know ex ante how these cases entered the MJS, and we cannot observe the disposition decisions that sent a case down the NJP path.
- NJP: For this study, we could not observe anything on the NJP path. The QCAR data that are now being collected will improve visibility on USN NJP results. Based on the extract provided to us, however, it is still missing information for important steps in the incident processing and pre-hearing phases.

USN analytical samples

Next, we provide selected descriptive statistics for the combined MJS-DMDC analytical samples for each USN data source, focusing on the data elements that are most important for understanding the analysis of outcome disparities.

MJS outcomes analyzed for the USN

Table 25 lists the MJS outcomes we could analyze using the USN data and the associated comparison populations that form the basis of the disparity calculations. Identifying the comparison populations highlights which outcomes are *unconditional* first-observed outcomes

(i.e., those for which the comparison population is all Sailors) and which are *conditional* MJS outcomes (i.e., those for which the comparison populations come from the MJS data).[52]

Table 25. MJS outcomes analyzed for the USN

Requested outcome	Analyzed outcome	Comparison population
Investigation		
Military LEA indicator	Investigated by NCIS	All Sailors
CM		
CM type	Case opened by an LSST (Overall, by CM type, & by offense type)	All Sailors
CM type	Case referred to CM	Those with preferral dates
Acceptance of plea offer	CM pre-trial agreement	Those with preferral dates
Proceed to CM	Tried by CM	Those with referral dates
CM finding	CM guilty finding	Those with CM verdicts
CM sentence	CM punishment type	Those with guilty findings

Source: CNA

Sample sizes and percentages for first-observed outcomes

Table 26 reports counts and percentages for the first-observed outcomes from the final USN samples. The first column in the table lists the REG groups of interest in this study. The second and third columns show, overall and for each REG group, the number and percentage of Sailors in the ADMF sample for FY 2014 through FY 2020: 60.1 percent of the sample is White, 18.8 percent of the sample is Black, 17.0 percent of the sample is Hispanic, and 20.7 percent of the sample is female.

The fourth and fifth columns show the total number and the percentage of each REG group who were investigated by NCIS and the sixth and seventh columns display the same information for those for whom preferred charges resulted in a CM case being opened by an RLSO. The data show that 2.4 percent of Sailors were investigated by NCIS, and 0.3 percent were subjects of an opened RLSO CM case.

Using the data in Table 26, we can calculate simple DIs to determine whether REG disparities exist in the raw data. Doing this, we find that, compared to White Sailors, Black Sailors were 1.90 times more likely to be investigated by NCIS and 1.81 times more likely to be the subject of an opened CM case. Outcome disparities between non-Hispanic and Hispanic Sailors were smaller than the disparities between Black and White Sailors. The Hispanic-non-Hispanic DIs are 1.06 for NCIS investigations and 0.97 for opened CM cases. Turning to gender, women in

[52] Recall that models of conditional MJS outcomes include offense types and counts as explanatory variables.

the sample were less likely than men to experience both the first-observed outcomes. The female-male DIs are 0.40 for NCIS investigations and 0.37 for opened CM cases.

Table 26. Sample sizes and percentages for all Sailors and first-observed outcomes

	All Sailors		Investigated by NCIS		CM case opened	
REG group	Count	% of total	Count	% with outcome	Count	% with outcome
All	503,165	100.0	12,244	2.4	1,550	0.3
White	302,331	60.1	6,146	2.0	780	0.3
Black	94,697	18.8	3,658	3.9	447	0.5
Other	86,968	17.3	1,962	2.3	249	0.3
Unknown	19,169	3.8	478	2.5	74	0.4
Non-Hispanic	330,815	65.7	8,037	2.4	1,052	0.3
Hispanic	85,326	17.0	2,201	2.6	266	0.3
Unknown	87,024	17.3	2,006	2.3	232	0.3
Male	398,959	79.3	11,081	2.8	1,415	0.4
Female	104,206	20.7	1,163	1.1	135	0.1

Source: CNA.

Regression-adjusted USN outcome disparities

Next, we examine how USN MJS outcomes differ by REG, holding the control factors constant and focusing on the following comparisons:

- Race: Black relative to White
- Ethnicity: Hispanic relative to non-Hispanic
- Gender: female relative to male

Odds ratios for observable USN outcomes

Our primary measurement of outcome disparities is ORs estimated with logistic regression models that control for the offender-, incident-, and process-related factors that may be correlated with both REG and the MJS outcome of interest. The estimated ORs for the observable USN MJS outcomes are shown in Table 27.[53] The shading in Table 27 identifies disparities in the five categories defined in the approach section:

[53] See Appendix B for a discussion of the impact of the offender-, incident-, and process-related control factors on measured outcome disparities. Complete output from the 16 final logit models is available upon request.

- Green ⇒ small disparities or no disparity
- Light red ⇒ mid-sized positive disparities
- Dark red ⇒ large positive disparities
- Light gold ⇒ mid-sized negative disparities
- Dark gold ⇒ large negative disparities

Finally, for each REG group, we also ranked the 16 USN outcomes according to OR size, and the five largest positive disparities are identified in bold font.

Table 27. Odds ratios for modeled USN outcomes[a]

Outcome	Black	Hispanic	Female
Incident processing			
Investigated by NCIS	**1.84*** **	**1.20*** **	0.37***
CM outcomes by MJS phase, CM type[b], offense type, and punishment type[c]			
CM case opened (total)	**1.83*** **	1.09	0.34***
CM case opened (SPCM)	**1.88*** **	**1.15**	0.46***
CM case opened (GCM)	1.57***	0.96	0.10***
CM case opened (drug offenses)	**2.00*** **	0.99	0.50***
CM case opened (sex offenses)	**2.02*** **	**1.20**	0.06***
CM case opened (other civilian offenses)	1.71***	**1.22**	0.34***
CM case opened (military-specific offenses)	1.80***	**1.15**	0.43***
Referred to CM	0.88	0.73	0.90
Pre-trial plea agreement	0.74*	0.97	0.87
Tried by CM	0.63**	0.62*	**1.02**
CM guilty finding	0.54*	**1.47**	0.77
CM punishment type (fine)	1.22	1.11	0.94
CM punishment type (reduction in rank)	0.74	0.83	1.00
CM punishment type (confinement)	0.75	0.86	0.56
CM punishment type (discharge)	0.62*	0.80	0.76

Source: CNA calculations using the combined DMDC-USN MJS datasets.
[a] Statistical significance: 1, 5, and 10 percent levels indicated by ***, **, and *, respectively. Shading: green ⇒ OR = 0.9-1.1 or insignificant; light red ⇒ significant OR = 1.11-1.5; dark red ⇒ significant OR > 1.51; light gold ⇒ significant OR= 0.5 to 0.89; dark gold ⇒significant OR < 0.5. Bold indicates five largest positive disparities.
[b] There were only 115 SCM cases in the USN Wolverine/CMS extract so we did not estimate a logit model for this outcome.
[c] The sample sizes for the following punishment types were too small for logistic regression analysis (the models would not converge): restriction, reprimand, and hard labor.

The primary result that is immediately visible in the table is that the cells for the first-observed outcomes in the column for Black Sailors are red, while they are dominantly green in the column for Hispanic Sailors and gold in the column for female Sailors. In contrast, the cells for the conditional MJS outcomes are generally green or gold across all three columns. Thus, the largest positive USN MJS disparities are Black-White racial disparities in first-observed outcomes.

To interpret the meaning of these results, we consider how the disparities differ by when and where they occur in the MJS and by whether they are associated with high- or low-discretion outcomes. We focus primarily on positive disparities since that is the focus of the study. In addition, when the results vary by REG group, we discuss each group separately.

Disparities at specific points in the USN MJS

Determining where the largest disparities exist provides information about potential causes of the disparities and identifies points in the process where policy-makers can focus efforts to eliminate disparities, including efforts to uncover and address any bias that may exist in the system.

Black-White disparities

The estimated racial disparities for the unconditional first-observed outcomes are large and positive. Controlling for other factors, Black Sailors were more likely than White Sailors to be investigated by NCIS and have CM cases opened—overall and by CM forum and offense type. The ORs for all these outcomes are statistically significant at the 1 percent level. With ORs of 2.00 and 2.02, respectively, the disparities associated with CM cases for drug- and sex-related offenses are the two largest.

Turning to conditional outcomes on the CM path, the data allow us to observe referred cases, tried cases, and cases with guilty findings. First, the statistically insignificant OR for having a case referred to CM indicates that, conditional on having opened cases, Black and White Sailors experienced this outcome at similar rates. Next, conditional on having a referred case, Black Sailors were less likely than White Sailors to go to trial, and conditional on being tried, Black Sailors were less likely than White Sailors to be found guilty. The conditional ORs for these outcomes are 0.63 (significant at the 5 percent level) and 0.54 (significant at the 10 percent level), respectively. Finally, conditional on having opened cases, Black Sailors were less likely than White Sailors to have a pre-trial plea agreement.

These results suggest that there is something different about the cases brought against Black and White Sailors and they indicate that, if there is bias in the MJS process it is most likely to occur in the incident processing phase—either at accusation, investigation, or initial disposition.

Hispanic-non-Hispanic disparities

With only two exceptions, the estimated ORs for ethnic disparities are predominantly small or insignificant. First, the only positive disparity is indicated by the statistically significant OR of 1.20 for investigation by NCIS. Second, the only negative disparity is indicated by the OR of 0.62 for trial by CM. These results suggest that there could be bias in the incident processing phase as Hispanic Sailors are more likely to be investigated for the more serious crimes handled by NCIS, but ultimately less likely to be tried.

Female-male disparities

The estimated gender disparities for the unconditional first-observed outcomes are large and negative. Controlling for other factors, female Sailors were less likely than male Sailors to be investigated by NCIS and have CM cases opened—overall and by CM forum and offense type. The ORs for all these outcomes are statistically significant at the 1 percent level. In contrast, the disparities for the conditional MJS outcomes are small and/or insignificant. Thus, female Sailors were less likely than male Sailors to enter the USN MJS, but once in the system, they experienced the various outcomes at similar rates.

High- and low-discretion USN disparities

Next, we consider whether the measured disparities reported in Table 27 vary according to the level of discretion associated with the outcome. If there is unfavorable REG bias in the MJS, we would expect to see greater positive disparities for outcomes that result from higher levels of either institutional or individual discretion.

Using the guiding framework, we defined high- and low-discretion outcomes by MJS forum, investigation type, and offense type. The USN data do not allow us to observe differences by investigation type. In addition, although we can distinguish between the two low-discretion MJS forums (i.e., SPCM and GCM cases), the USN extracts did not include enough data for us to observe outcomes for the two high-discretion forums—NJP or SCM cases. Therefore, we focus on how significant positive racial disparities vary across the relatively high- and relatively low-discretion offense types:

- Higher discretion: military-specific offenses
- Lower discretion: drug- and sex-related offenses

The OR of 1.8 for military-specific offenses is lower than the ORs of 2.00 for drug-related offenses and 2.02 for sex-related offenses. Thus, this criterion does not provide evidence of racial bias in the MJS.

Conclusions

Data assessment

The USN data extracts included the individual and case IDs needed to create the I-C records required to do analysis. In addition, the CLEOC and Wolverine/CMS extracts include common CCNs that should allow data from the two systems to be merged for analysis. The CCN fields were, however, generally blank in the Wolverine/CMS records, so we could not track cases across systems.

The data we received supported analyzing most of the CM-related outcomes included in our data request. In particular, we could identify cases that were referred to CM, but did not go to trial. There were, however, gaps at the end of the CM process (the data did not include information on appeals) and for most of the NJP-related outcomes, which are far more frequent than the CM outcomes. In addition, for both disciplinary and judicial outcomes, we received very little information about outcomes that occur in the incident processing phase, especially regarding initial accusations and investigations. This means that we are missing key interim outcomes on which later outcomes should be conditioned.

Disparities

Even after controlling for other factors, there are significant racial and gender disparities in USN MJS outcomes. The estimated Black-White disparities are positive and associated with first-observed outcomes. Black Sailors were more likely than White Sailors to be investigated by NCIS and be the subjects of CM cases opened by RLSOs—overall, for both CM types, and for all offense types. The female-male disparities are associated with the same first-observed outcomes, but they are negative—female Sailors were less likely than male Sailors to be investigated and be subjects of opened CM cases. The data do not allow us to observe outcomes in the incident processing phase of the USN MJS, so we cannot tell whether the racial and gender disparities associated with the unconditional first-observed outcomes arose at the point of initial accusation or at the initial disposition decision.

Turning to the conditional USN MJS outcomes, although there is an estimated positive racial disparity for opened cases, the estimated Black-White disparities for being tried by CM conditional on having one's case referred to CM and for being found guilty at CM conditional on being tried by CM are significant and negative. These results have two implications. First, if racial bias does exist in the USN MJS process it is most likely to exist in the incident processing phase—either at accusation, investigation, or initial disposition. Second, there may be differences in the CM cases brought against Black and White Sailors.

Finally, the estimated ethnic disparities were consistently small or insignificant—Hispanic Sailors experienced nearly all the modeled outcomes at roughly the same rates as non-Hispanic Sailors.

Combined these results indicate that data for NJP outcomes and outcomes that occur during the incident processing phase of the USN MJS must be collected and analyzed to better understand and eliminate the observed positive racial disparities and that USN leadership should investigate differences in the quality of CM cases brought against Black and White Sailors.

Analysis and Results: Coast Guard

This section describes the data, analysis, and results for the USCG. It also includes our interpretations of the analytical results and the conclusions we draw from them.

USCG data sources

The sources of the MJS data provided by the USCG are identified in Table 28. For each data source, the table shows the data system name and the types of information it includes, plus the years covered by, and the number of unique I-C records contained in, the submitted extracts.

Table 28. USCG data sources

Data system	Included information	Fiscal years	I-C records
Field Activity Tracking System (FACTS)	None provided; data unavailable due to system updates	-N/A-	-N/A-
Human Capital Production (HCPRD)	Records of USCG military personnel found guilty at NJP by FY	2013-21	5,238
Law Manager	USCG cases referred to CM based on the FY of the charge preferral date	2013-20	551
Wolverine		2021	-N/A-

Source: CNA.

Field Activity Tracking System (FACTS)

FACTS is a web-based electronic case records management system. It is the primary case management system used by the CGIS to "capture, relate, and analyze information about the professional investigative activities of CGIS special agents" [31]. Specifically, FACTS includes information about subjects under investigation for violations of the laws and regulations enforced by the USCG (e.g., SSN, demographic information, job performance evaluations, and criminal history). It also includes information about the incident under investigation (e.g., unique case IDs, case type, victim and witness information, and forensic reports).[54]

FACTS came into use in July 2014 and has had multiple updates since that time [32], including an update in late 2021. As a result of the recent update, FACTS data were not retrievable at the

[54] FACTS also includes the USCG's Anti-Harassment and Hate Incident records and records related to CGIS activities supporting background investigations of CGIS applicants, internal affairs investigations and administration, and investigations resulting from complaints to the DHS Office of Inspector General [31].

time of our data call and no FACTS extract was provided. Thus, we do not include FACTS in our data assessment or use FACTS data in our disparity analysis. For the former, we refer readers to the *Oversight Review of the United States Coast Guard Investigative Service* conducted by the DHS Office of Inspector General and completed in June 2017 [32]. The review identified several issues related to the completeness and consistency of FACTS data, but it did not address issues related to data on REG or the specific areas of interest for this study.[55]

Human Capital Production (HCPRD)

HCPRD is the database that stores USCG NJP records. It is part of a larger system known as Direct Access (DA), which is the USCG's primary personnel and payroll system. DA is a web-based system that provides "full lifecycle HR and payroll support (i.e., recruiting through death) for active duty, reserve, and retired active duty and retired reserve personnel," including information on disciplinary actions [33]. The extract provided for this study identifies USCG officers and enlisted personnel who were found guilty at Article 15 proceedings from FY 2013 through FY 2021.

Law Manager/Wolverine

The CM data provided by the USCG came from two sources. For FY 2013 through FY 2020, the data came from the USCG's legacy case management system called Law Manager. The USCG began using Law Manager to track CM cases in 2003 [3]. It is a commercial off-the-shelf web-based application that was tailored for use by USCG attorneys to track individual cases through the military justice process [34]. Specifically, Law Manager captured information about accused offenders (e.g., name, date of birth, gender, and race) and their cases (e.g., charges, dates of offenses, the type of CM, pleas, verdicts, sentences, and final punishments) [35]. The Law Manager extract provided for this study includes data on USCG cases referred to CM and for which charges were preferred in FY 2013 through FY 2020.

[55] The following is an excerpt from the OIG review:

> We found FACTS to be a robust system with the potential to serve its intended purpose. FACTS contained most, though not all, of the appropriate fields to capture basic information related to allegations and investigations. However, the use of FACTS between offices is not standardized, resulting in differences in what information was entered, where it was entered, and how it was structured. For example, the case narrative paragraph, the purpose of which is to provide a synopsis of the investigation, in some cases provided a complete summary of the investigation, but in other cases merely presented the allegation. The unstandardized usage of FACTS also resulted in problems with data captured within it. We found some fields were not consistently utilized which caused disparities in the data collected. Some employees reported that the statistical data extracted through FACTS was unreliable. One employee estimated that the statistical data pulled from FACTS was at best 60 percent reliable. [32]

In FY 2021, the USCG began using the Wolverine system that is maintained by the USMC and described in both the USMC and USN sections. Since we confined the analysis period to FY 2014 to FY 2020, we did not use the USCG CM data from Wolverine in the disparity analysis and we focus on Law Manager in our assessment of USCG data.

USCG data assessment

We assessed the quality of the USCG data extracts according to the usability and completeness criteria listed in the description of our approach to data assessment. The data samples described here do not match the final samples used for analysis, which include only regular active duty enlisted personnel and data from FY 2014 through FY 2020.

Usability: Individual IDs

Since some individuals are associated with more than one case and some cases include multiple individuals, it is necessary to create unique I-C records as the unit of observation. Table 29 shows how we created the unique records for each USCG dataset and identifies records with missing individual IDs. There were no missing individual IDs in the HCPRD NJP records. In the Law Manager extract, however, ID was blank in 769 records, which translated to missing IDs in 75 of the 551 I-C records. Thus, the total number of usable I-C CM records is 476.

Table 29. Creating I-C records in the USCG datasets and the impact of missing IDs

Record type	HCPRD[a]	Law Manager[b]
Total records[c]	16,469	6,029
Unique records		
Individuals	4,375	363
Cases	5,238	551
I-C records	5,238	551
Missing IDs		
Total records	0	769
I-C records	0	75
I-C records with IDs		
Counts	5,238	476
Share of total	100%	86%

Source: CNA.
[a] The HCPRD extract includes records of USCG personnel found guilty at NJP (Article 15) proceedings.
[b] The Law Manager extract includes records of USCG CM cases based on charges preferred in FY 2013 through 2014.
[c] These records reflect all submitted data; they do not reflect various data-cleaning steps used to create the final analytical samples.

Usability: Case IDs

Neither USCG MJS data system uses case IDs. To create I-C records for the NJP data from HCPRD, we combined individual IDs with a variable called NJP discipline date. To create I-C records for the CM data from Law Manger, we used three variables: individual ID, charges preferred date, and case type.[56]

Usability: Data structure

In general, the formats of the USCG data were readily usable. There was, however, one exception. In the HCPRD NJP extract, the offense codes do not follow the standard UCMJ format found in the other services' extracts. Only 111 out of the 268 values for the offense code variable match the offense categories used for the other services.

Completeness for analyzing MJS outcomes

Next, we assess the completeness of the USCG data relative to our request for information about important MJS outcomes identified in the guiding framework. Specifically, Table 30 lists the outcome variables we requested and shows whether they were provided in the HCPRD and Law Manager data extracts. The entries in Table 30 are yes/no to indicate whether an outcome variable was provided and N/A to indicate that an outcome variable is outside the purview of the specified data system. Other entries are used to provide specific information about the data provided.

First, for completeness, the table shows that the FACTS data for CGIS investigations were not available for the study. Turning to the NJP and CM data that were provided, the table shows that the USCG extracts included very few of the requested variables. The HCPRD extract on NJPs provides information on NJP guilty findings only. It does not provide any information about whether an NJP was refused or resulted in anything other than a punitive action (e.g., administrative action or no action). There was also very limited information on punishments imposed; we could only observe punishments for those who received a grade reduction. The Law Manager extract provides information on only three basic outcomes: initial referral to CM, CM findings, and CM punishment types for those found guilty. The data do not, however, allow us to identify cases in which charges were preferred, but the case was not ultimately referred to CM or those that were referred, but not ultimately arraigned. Nor did the Law Manager extract include any information about appeals.

[56] The Wolverine data system to which the USCG has shifted does include a case ID as does the FACTS system for CGIS data. The Wolverine case ID is a CCN with the same structure as the CLEOC CCN. If the Wolverine CCN also matches the FACTS CCN, it should be possible to merge USCG CM and investigations data in the future.

Table 30. Requested outcome variables included in data submitted by USCG providers

Requested outcome	FACTS[a]	HCPRD[b]	Law Manager[c]
Investigation			
Military LEA indicator	Unavailable for this study	-N/A-	-N/A-
Military LEA ID			
Multiple civilian LEA indicators			
Disposition			
Punishment below NJP	-N/A-	No	-N/A-
NJP offered		No	
CM type		-N/A-	**Case referred to CM**
Nonjudicial Punishment (NJP)			
NJP accepted	-N/A-	No	-N/A-
NJP outcome		**NJP guilty finding**	
NJP outcome appealed		No	
NJP appeal result		No	
Court-martial (CM)			
Pre-trial confinement	-N/A-	-N/A-	No
Plea offer			No[d]
Terms of nth plea deal			
Acceptance of plea offer			
Other non-CM resolution			No
Proceed to CM			No
CM type			No
Number of judges			No
CM verdict			**Yes**
CM sentence			**Yes**
Appeal indicator			No
Result of appeal			No

Source: CNA.
[a] FACTS data were not available for this study due to recent system updates.
[b] The HCPRD extract includes records of USCG military personnel found guilty at NJP.
[c] The Law Manager extract includes USCG cases referred to CM based on the FY of the charge preferral date.
[d] The Law Manager extract includes information about the initial plea, but not about plea agreements.

Taken together, the USCG MJS data provided for this study left the following gaps in our ability to track cases across all phases and steps along the MJS paths:

- Incident processing

  - Entry into the MJS: We cannot observe all Coast Guardsmen who are accused of, or investigated for, disciplinary or criminal offenses; we can only see Guardsmen whose cases are initially disposed of by referral to CM.
  - Disposition: We can observe ex post disposition decisions that resulted in a case being referred to CM, but we do not know ex ante how these cases entered the MJS, and we cannot observe the disposition decisions that sent a case down the NJP path.
- NJP path: We cannot observe any outcomes before the guilty finding, nor can we observe all the punishments that were imposed. Thus, we are missing all steps in the pre-hearing phase and all but the finding step in the adjudication and sentencing phase. In particular, we cannot observe cases in which a punishment was not imposed (e.g., cases that were dismissed or that resulted in a not guilty finding).
- CM path: Once a case was referred to CM, we cannot separately observe starting and completing trial by CM. In other words, we cannot observe cases that are referred to CM, but do not ultimately proceed to trial.

USCG analytical samples

Next, we provide selected descriptive statistics for the combined MJS-DMDC analytical samples for each USCG data source, focusing on the data elements that are most important for understanding the analysis of outcome disparities.

MJS outcomes analyzed for the USCG

Table 31 lists the MJS outcomes we could analyze using the USCG data and the associated comparison populations that form the basis of the disparity calculations. Identifying the comparison populations highlights which outcomes are *unconditional* first-observed outcomes (i.e., those for which the comparison population is all Coast Guardsmen) and which are *conditional* MJS outcomes (i.e., those for which the comparison populations come from the MJS data).

Sample sizes and percentages for first-observed outcomes

Table 32 reports counts and percentages for the main first-observed outcomes from the final USCG samples. The first column in the table lists the REG groups of interest in this study. The second and third columns show, overall and for each REG group, the number and percentage of Coast Guardsmen in the ADMF sample for FY 2014 through FY 2020: 74.7 percent of the sample is White, 6.2 percent of the sample is Black, 14.9 percent of the sample is Hispanic, and 14.9 percent of the sample is female.

The fourth and fifth columns show the total number and the percentage of each REG group that received an NJP guilty finding. The sixth and seventh columns display the same information for those whose cases were referred to CM. The data show that 5.8 percent of Coast Guardsmen were found guilty at NJP proceedings and 0.5 percent had cases referred to CM.

Table 31. MJS outcomes analyzed for the USCG

Requested outcome	Analyzed outcome	Comparison population
NJP		
NJP outcome	NJP guilty finding	All Coast Guardsmen
NJP punishment	NJP reduction in rank	Those with NJP guilty findings
CM		
CM type	Case referred to CM (Overall, by CM type, & by offense type)	All Coast Guardsmen
CM finding	CM guilty finding	Those with CM verdicts
CM sentence	CM punishment type	Those with CM guilty findings

Source: CNA.

Table 32. Sample sizes and percentages for all Coast Guardsmen and first-observed outcomes

	All Guardsmen		NJP guilty finding		Referred to CM	
REG group	Count	% of total	Count	% with outcome	Count	% with outcome
All	52,349	100.0	3,053	5.8	261	0.5
White	39,113	74.7	22,29	5.7	194	0.5
Black	3,234	6.2	236	7.3	26	0.8
Other	4,888	9.3	301	6.2	23	0.5
Unknown	5,114	9.8	287	5.6	18	0.4
Non-Hispanic	37,462	71.6	2,151	5.7	193	0.5
Hispanic	7,805	14.9	528	6.8	49	0.6
Unknown	7,082	13.5	374	5.3	19	0.3
Male	44,546	85.1	2,705	6.1	251	0.6
Female	7,799	14.9	348	4.5	10	0.1

Source: CNA.

Unadjusted USCG outcome disparities

The data in Table 32 show that the USCG sample sizes are much smaller than the sample sizes for the other services. Therefore, we could not estimate logistic models to isolate the effects of REG from the effects of other relevant factors. Instead, we calculated unadjusted DIs to determine whether REG disparities exist in the raw USCG data, focusing on the following comparisons:

- Race: Black relative to White
- Ethnicity: Hispanic relative to non-Hispanic
- Gender: female relative to male

Disproportionality indices for observable USCG outcomes

These DIs calculated for the observable USCG MJS outcomes are shown in Table 33. The shading in the table identifies disparities in the five categories defined in the approach section:

- Green ⇒ small disparities or no disparity
- Light red ⇒ mid-sized positive disparities
- Dark red ⇒ large positive disparities
- Light gold ⇒ mid-sized negative disparities
- Dark gold ⇒ large negative disparities[57]

Finally, for each REG group, we also ranked the 18 USCG outcomes according to DI size, and the five largest positive disparities are identified in bold font.

The primary result that is visible in the table is that the top half of the column for Black Coast Guardsmen is dominantly red, while the top half of the column for female Guardsmen is dominantly gold. The top half of the column for Hispanic Guardsmen is a mix of red and gold. The color patterns then switch for the outcomes in the subsequent rows, with gold and green cells for the Black and Hispanic outcomes and gold and red cells for the female outcomes.

To interpret the meaning of these results, we consider how the disparities differ by when and where they occur in the MJS process and by whether they are associated with high- or low-discretion outcomes. We focus primarily on positive disparities since that is the focus of the study. We discuss the results for each REG group separately.

[57] Although we use the same disparity categories based on the same value ranges as we used for the ORs, the categories for DIs do not incorporate any concept of statistical significance.

It is important to note that, although the presentation and interpretation of these DIs are similar to the presentation and interpretation of the ORs estimated for the other services, they are not directly comparable because they do not control for the other factors. In other words, these *unadjusted* USCG disparities are not directly comparable to the *adjusted* disparities for the other services. More importantly, we cannot draw strong conclusions about the existence of disparities in the USCG MJS because we do not know whether they would increase, decrease, or remain the same if we were able to control for the other factors.

Table 33. Disparity indices for USCG outcomes[a]

Outcome	Black	Hispanic	Female
NJP outcomes by MJS phase, offense, and punishment type			
NJP guilty finding	**1.28**	**1.18**	0.73
NJP rank reduction	1.19	**1.20**	0.85
CM outcomes by MJS phase, CM type, offense, and punishment type			
CM case referral (total)	**1.62**	**1.22**	0.23
CM case referral (SCM)	1.17	0.75	**1.65**
CM case referral (SPCM)	**1.62**	0.86	0.51
CM case referral (GCM)	0.25	**1.56**	0.72
CM case referral (drug offenses)	**2.49**	0.72	0.60
CM case referral (sex offenses)	0.58	1.15	0.76
CM case referral (other civilian offenses)	0.90	0.81	0.19
CM case referral (military-specific offenses)	**1.39**	0.94	**1.46**
CM guilty finding	1.19	1.03	**1.16**
CM punishment type (fine)	1.05	0.33	**1.28**
CM punishment type (reduction in rank)	0.70	1.03	**1.24**
CM punishment type (restriction)	0.63	0.85	0.00
CM punishment type (reprimand)	0.70	0.96	0.00
CM punishment type (confinement)	0.19	**1.37**	0.00
CM punishment type (discharge)	0.27	1.04	0.00
CM punishment type (hard labor)	1.05	0.00	0.00

Source: CNA calculations using the combined DMDC-USCG MJS datasets.
[a] Shading: green ⇒ 0.9 ≤ DI ≤ 1.1; light red ⇒ 1.1 < DI ≤1.5; dark red ⇒ DI > 1.5; light gold ⇒ 0.9 < DI ≤ 0.5; dark gold ⇒ DI < 0.5. DIs of 0.00 indicate that no one in the indicated REG group experienced the indicated outcome. Bold indicates five largest positive disparities.

Disparities at specific points in the USCG MJS

Determining where the largest disparities exist provides information about potential causes of the disparities and identifies points in the process where policy-makers can focus efforts to

eliminate disparities, including efforts to uncover and address any bias that may exist in the system.

Black-White disparities

The racial disparities for the unconditional first-observed outcomes are generally large and positive. Black Coast Guardsmen were more likely than White Coast Guardsmen to be found guilty at NJP, and have their cases referred to CM. The DIs for these outcomes are 1.28, and 1.62, respectively. Black Guardsmen were also more likely to be referred to SCM and SPCM and to be referred to CM for drug-related offenses. There are two exceptions to this pattern: the disparities for referral to GCM (DI is 0.25) and for sex-related offenses (DI is 0.58) are negative.

Since we do not observe any intermediate outcomes before being found guilty at NJP, we cannot pinpoint where this disparity truly arose in the NJP process. Recalling the hypothetical examples of conditional and unconditional outcomes from Table 1, the DI for this outcome could be measuring a disparity at the NJP guilty finding point or it could be picking up disparities that occurred earlier—either at the point of initial accusation or at the disposition decision. Conditional on being found guilty at NJP, the data show that Black Guardsmen were more likely than White Guardsmen to be punished with a rank reduction. Because we are not able to observe any of the other NJP punishment types, this result is not very informative.

Turning to conditional CM outcomes, the data show a mid-sized positive Black-White disparity (DI is 1.19) for being found guilty at CM conditional on having a case referred to CM, but conditional on being found guilty, the DIs for the seven punishment types range from 0.19 to 1.05, indicating small or negative disparities.

Hispanic-non-Hispanic disparities

The calculated ethnic disparities for unconditional first-observed outcomes are more varied than the racial disparities. With DIs of 1.18, 1.22, and 1.56, the largest positive ethnic disparities are for being found guilty at NJP, having a case referred to any CM, and having a case referred to GCM, respectively. The disparities for referral to SCM and SPCM and for referral for drug-related offenses and other civilian crimes are, however, negative. The DIs for these outcomes are 0.75, 0.86, 0.72, and 0.81, respectively.

The disparity for the conditional outcome of receiving a rank reduction conditional on a guilty NJP finding is also large and positive, but, again, since we do not observe any intermediate outcomes before being found guilty at NJP, we cannot pinpoint where this disparity truly arose in the NJP process and, because we are not able to observe any of the other NJP punishment types, this result is not very informative.

The ethnic disparities for conditional CM outcomes are generally small or negative. The exception is the mid-sized positive disparity (DI is 1.37) for receiving confinement as a punishment following a guilty CM finding.

Female-male disparities

The gender disparities for unconditional first-observed outcomes are generally negative. Female Coast Guardsmen were less likely than male Coast Guardsmen to be found guilty at NJP and to have a case referred to any CM, an SPCM, or a GCM. The two exceptions to this pattern are the positive disparities for referral to SCM (DI is 1.65) and being referred for military-specific offenses (DI is 1.46).

Turning to conditional CM outcomes, the data show a mid-sized positive gender disparity (DI is 1.16) for being found guilty at CM conditional on having a case referred to CM. The gender disparities by punishment type (conditional on being found guilty) are either positive or negative. The DIs for receiving a fine or reduction in rank are 1.28 and 1.24, respectively. In contrast, the DIs for the other punishment types are large and negative—the DIs of 0.00 indicate that none of the women in the sample received these punishments following a guilty CM finding.

High- and low-discretion USCG disparities

Next, we consider whether the measured disparities reported in Table 33 vary according to the level of discretion associated with the outcome. If there is unfavorable REG bias in the MJS, we would expect to see greater positive disparities for outcomes that result from higher levels of either institutional or individual discretion. Therefore, we focus on how significant positive disparities vary across the relatively high- and relatively low-discretion outcomes we identified using the guiding framework and can observe in the USCG data:

- MJS forum
  - Higher discretion: NJP and SCM
  - Lower discretion: SPCM and GCM
- Offense type
  - Higher discretion: military-specific offenses
  - Lower discretion: drug- and sex-related offenses

Black-White disparities

Starting with MJS forum, the discretion-related pattern provides evidence of potential racial bias in the USCG MJS: the DI for the lowest discretion forum, GCM, is 0.23, indicating a negative disparity. In contrast, the DIs for the higher discretion forums indicate positive disparities: 1.62 for SPCM, 1.28 for NJP, and 1.17 for SCM. Turning to offense type, the DIs indicate no strong discretion-related disparity pattern. The DIs for the lower discretion drug- and sex-related offenses are 2.49 and 0.58, respectively. The DI for military-specific offenses, the higher discretion outcome, falls in between at 1.39.

Hispanic-non-Hispanic disparities

There are no discretion-related patterns to indicate the presence of ethnic bias in the USCG MJS. Starting with MJS forum, the DIs for the lower discretion forums—GCM and SPCM—are 1.56 and 0.86, respectively; the DIs for the higher discretion forums—NJP and SCM—are 1.22 and 0.75, respectively. Nor is there any discretion-related pattern by offense type. The DIs for the lower discretion drug- and sex-related offenses are 0.72 and 1.15, respectively; the DI for military-specific offenses, the higher discretion outcome, falls in between at 0.94.

Gender disparities

For gender, the disparity patterns by MJS forum are not indicative of bias, but they do tell a different type of story. Specifically, the negative disparity for being found guilty at NJP (DI is 0.73) combined with the positive disparity for being referred to SCM (DI is 1.65) suggests that female Coast Guardsmen may be more likely than male Coast Guardsmen to reject NJP. This hypothesis could be verified with data, but the data required to do so was not provided for this study. Turning to offense type, the DI for high-discretion military-specific offenses (1.46) is higher than the DIs for lower discretion drug- and sex-related offenses (0.60 and 0.76, respectively), which indicates possible gender bias in the USCG MJS.

USCG conclusions

Data assessment

The USCG HCPRD and Law Manager extracts included the individual IDs and other variables needed to create the I-C records required to analyze the data using the appropriate unit of observation. In addition, the recently adopted Wolverine data system includes CCNs that may allow CM and investigative data to be merged in the future.

The data we received did not support analyzing all the outcomes included in our data request and the gaps occur throughout the MJS process. First, we received very little information about outcomes that occur in the incident processing phase, especially regarding initial accusations, investigations, and initial disposition decisions. There were also data gaps for the pre-hearing/pre-trial phase, especially involving decisions or outcomes that resulted in a case not going forward along the initial disposition path (either NJP or CM). Finally, we received no information about outcomes in the post-hearing/post-trial phase. As a result, we are missing key interim outcomes on which later outcomes should be conditioned.

The adoption of the Wolverine data system is likely to fill many of the information gaps on the CM path. From an analytical perspective, however, the USCG will always be limited by the small CM sample sizes. This means that it is important for the USCG to develop robust data systems

on which to build long histories and to consider using other methods to assess its MJS outcomes.

REG disparities

The unadjusted DIs indicate that there may be positive racial disparities in USCG MJS outcomes. In particular, the calculated Black-White disparities for higher discretion first-observed outcomes are positive. The calculated gender disparities are generally negative, and the calculated ethnic disparities are more varied. The data do not allow us to observe outcomes in the incident processing phase of the USCG MJS, so we cannot tell whether the observed REG disparities associated with the unconditional first-observed outcomes arose at the point of observation or at some previous point—either initial accusation or at the initial disposition decision.

Turning to the conditional USCG MJS outcomes, Black and female Coast Guardsmen were more likely than White and male Coast Guardsmen, respectively, to be found guilty at CM. Hispanic and non-Hispanic Guardsmen were found guilty at similar rates. These results are different for what we generally observed for the other services.

Although we have calculated unadjusted DIs for the observable USCG outcomes and interpreted them using our established criteria, the fact that the DIs do not control for the effects of the other factors means that we cannot draw definitive conclusions about REG disparities from these results. Instead, we draw a conclusion about data collection: because the limiting factor in the USCG data is sample size due to the small number of CMs that occur in any given FY, it is even more important for the USCG than for the other services to collect complete information about NJP proceedings and their outcomes, because they happen frequently enough to support statistical analysis.

Conclusion: DOD-Level Findings and Recommendations

In this conclusion, we summarize findings that apply across DOD and make recommendations at the DOD level. We organize our findings and recommendations around the three research questions that are addressed in this report:[58]

1. How much of the required data currently exist and to what extent are they standardized across the services?
2. Do the existing MJS data reveal any differences in military justice outcomes by REG?
3. Can we identify any specific factors (including bias) that contributed to observed outcome disparities?

High-level summary of results

Figure 3 summarizes in one picture the data- and disparity-related results from this research effort. First, the gray shading identifies outcomes for which we could not estimate REG disparities with the data provided. Next, the red, gold, and green shading identifies outcomes for which we measured different types of disparities: red indicates significant positive disparities; gold indicates significant negative disparities; and green indicates small and insignificant disparities.

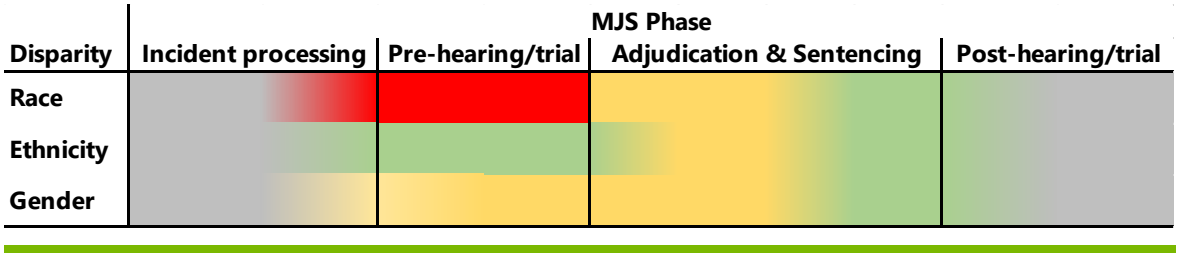
The main findings illustrated in the figure are:

- The provided data did not allow us to consistently observe and analyze outcomes
  - In the incident processing and the post-hearing/post-trial phases of the MJS
  - Associated with nonjudicial punishments (NJPs)
  - Across services
- We found several outcome disparities that were similar in all services
  - Positive Black-White disparities in the early phases of the MJS
  - Small and/or insignificant ethnic disparities across most phases of the MJS

[58] The *How To* companion document [2] addresses a fourth study question: what data elements should be tracked, and what disparity indicators should DOD use to monitor trends in MJS outcomes and take appropriate policy actions?

- Negative gender disparities across most phases of the MJS
- Small, insignificant, or negative REG disparities for guilty CM findings, conditional on being referred to CM or tried by CM

Figure 3. DOD-level summary of estimated REG outcome disparities by MJS phase



Source: CNA.
Disparities: positive = the group of interest is more likely to experience the outcome; negative = the group of interest less likely to experience the outcome.
Color key: gray = outcomes unobserved in the provided data; red =outcomes with positive disparities; gold = outcomes with negative disparities; green = outcomes with small or insignificant disparities.

Data assessment to address research question #2

To do the disparity analysis, we constructed service-specific datasets containing records of MJS incidents occurring from FY 2014 through FY 2020. The goal was to estimate REG outcome disparities through every phase of the MJS and to control for potentially relevant offender-, incident-, and process-related factors. Using the provided data, we were only partially successful in achieving this aim because of issues related to how the services collect and store the required data. These issues fell into two categories—those related to the analytical value of the data provided for this study and broader environmental issues that apply beyond this study. We summarize each in turn, starting with the latter.

Detailed findings: environmental issues

Within each service, administrative MJS data are stored in multiple data systems owned by different organizations and each system is expected to support not only the operational mission of the owning organization, but also statistical analyses of relevant policies and statutory reporting requirements. In addition, depending on the reporting requirements, the data systems must meet different sets of standards. One set of standards is the Uniform Standards and Criteria Required by Article 140a, which apply to CM data only. These standards were promulgated on December 17, 2018, with a proviso that they be implemented no later

than December 23, 2020, but they do not appear to have been fully implemented, even in recent data. The other set of standards are the DIBRS standards, which apply across the life of a case. These standards have complicated requirements for organization-specific responsibilities and require constant updating. Although the services are working to update their systems to meet the new requirements as well as modern technological standards, they must do so while continuing to use them. In addition, both the USAF and the USN (which manages MJS data for the USMC) reported funding issues in their most recent annual reports to Congress [15].

Together, these environmental issues mean that MJS data are inconsistent both within and across services and data collection, storage, and maintenance are inefficient and overly complicated. Thus, it remains cumbersome—and in some cases impossible—to follow incidents through the MJS and to prepare the data necessary to properly compute REG disparities.

Detailed findings: analytical value for this study

It is critically important to have clear information on what did and did not happen in the life of an incident or case. To accurately calculate conditional REG disparity measures, researchers must be able to observe the outcome of every step of the MJS that applies to each case. This information was not consistently included in the services' MJS data extracts. In particular, the provided data did not allow the research team to observe key outcomes in the incident processing phase, including initial entry into the MJS (e.g., how and against whom initial accusations were made) and most initial disposition decisions. Nor could we always observe where cases dropped out of the MJS during the pre-hearing/pre-trial phase (e.g., we had data on cases tried by CM, but could not observe cases that were initially referred but never arraigned).

The number and complexity of more specific data issues varied across datasets and by service. The following list identifies issues that were especially problematic for calculating conditional REG disparity outcome measures using the data provided for this study.

- No service carries consistent CCNs across all its MJS data systems, so there was no way to merge case information from the disparate datasets over the life of a case
- REG and other information about offenders was incomplete and did not appear to come from authoritative data sources
- The services have begun collecting more data on NJP outcomes, but information beyond NJP guilty findings was still mostly unavailable for this study
- Data structure and values
    - Some data values appeared to be entered manually, which introduced data error and made the data difficult to use

- Some of the data were provided in awkward structures that made it difficult and time-consuming to create variables that were usable for quantitative analysis
- In many records, key data elements, such as individual IDs and relevant dates, were not consistently filled in (i.e., there were missing values)
- In many records, it was difficult to distinguish between "0" values and missing values

Recommendations to improve data collection and analysis

We make two general and seven specific recommendations to improve data collection and analytical processes.

The first general recommendation is to provide the services with sufficient funding and support to ensure that MJS incident and case data are collected, stored, and made usable for conditional REG disparity analysis at each step in the MJS. While several efforts to improve MJS data are currently underway, it is our impression that they have been slowed or have yet to start because of insufficient financial resources, time, and technical expertise. This recommendation is consistent with DOD goals to create data advantage by treating data as a strategic asset [36].

The second general recommendation is to follow the approach described in the companion *How To* document when doing future REG disparity assessments. In particular, support service-specific studies and provide the time and structure for effective collaboration between researchers and MJS experts in each service.

The specific recommendations are:

- Continue efforts to collect complete NJP information
- Include common CCNs in all MJS data systems so that datasets associated with different parts of the MJS can be merged and cases can be followed from investigation through initial disposition to final resolution
- Populate variables related to offender characteristics, especially REG, by pulling data from authoritative personnel records
- Ensure that all relevant dates are populated
- Define all data fields to include all potential outcomes or values, including indicators that a variable is not applicable for a given incident or that the incident has not yet proceeded far enough through the MJS for the variable to apply
- Use dropdown menus to minimize data error and inconsistency due to hand entry

Disparity analysis to address question #3 and question #4

To identify disparities and their causes, we applied quantitative statistical methods to the MJS data extracts provided by the services. Specifically, we used logistic regression to model the relationships between each observable outcome, REG, and the available other factors. The resulting metrics represent REG disparities that remain even after controlling for other factors. We then applied multiple criteria to identify which disparities should be investigated further and draw conclusions about their potential causes.

Detailed findings: question #3

Our data analysis to address question #3 confirmed that there were significant racial and gender disparities in MJS outcomes during the study period. Across services and outcomes, we found positive racial disparities: in every service, Black enlisted personnel were more likely than White enlisted personnel to be investigated, be involved in NJP in some way, and be involved in CMs in some way, even after controlling for the other factors included in the regression models. Yet, conditional on the case progressing far enough in the MJS to have an adjudicated outcome, Black enlisted personnel were no more likely and, in many cases, were less likely than their White counterparts to be found guilty.

In contrast, across services and outcomes, we found negative gender disparities: in every service, female enlisted personnel were less likely than male enlisted personnel to enter the MJS and, conditional on the case progressing to an adjudication point, they were less likely to be found guilty.

Finally, we found few significant ethnic disparities in MJS outcomes. Across services and for most outcomes, Hispanic and non-Hispanic enlisted personnel experienced the modeled outcomes at similar rates.

Detailed findings: question #4

Turning to question #4, it is impossible to determine definitively whether bias exists in the MJS solely based on statistical analysis of administrative data records such as those used in this study. The analysis did, however, allow us to draw some inferences about bias as a potential cause of MJS disparities.

First, controlling for offender-, incident-, and process-related factors did not eliminate racial disparities and no specific factor emerged as a leading determinant of MJS disparities. Thus, bias remains on the table as a potential cause. In particular, the largest positive racial disparities were associated with the first-observed outcomes. This suggests that it is important

to get more clarity on how and why Black enlisted servicemembers enter the MJS. It would be especially valuable to better understand how outcomes differ depending on whether the initial investigation is conducted by a professional military LEA or by the command and how COs make their initial disposition decisions.

Second, the fact that, conditional on being referred to or tried by CM, racial and gender disparities are generally negative indicates that the cases brought against Black and female personnel may be systematically weaker than the cases brought against White and male personnel, respectively. This could, in turn, also be a sign of bias in the MJS.

Recommendations for addressing disparities

To address the identified MJS outcome disparities, we make the following recommendations, which range from general to specific:

- Seek to address disparities, not bias per se. As reported in the companion document, regardless of their causes, disparities may create perceptions of bias, and perceptions of bias may have negative effects not only on the effectiveness of the MJS, but also on readiness.
- Begin by studying:
  - How outcomes differ depending on whether the initial investigation is conducted by an MCIO, another professional military LEA, or by the command
  - How COs make their initial disposition decisions
  - The relative strengths of CM cases brought against Black versus White and male versus female servicemembers
- Follow additional steps recommended in the companion document. Specifically, conduct assessments and report results on a regular basis. Do not wait until negative publicity occurs and do not respond only to disparities identified in raw data.
- Develop procedures and systems for holding leaders accountable for the proper use of discretion across the full range of MJS outcomes. Discretion is a necessary part of law enforcement and justice, but it is also where bias (implicit or explicit) can enter. It is leadership's job to think more broadly about the role of discretion in the MJS.

Appendix A: Requested Data Elements

The specific data elements requested for this study are listed in Table 3 and Table 35.

Table 34. Requested "other factor" variables by category

Accused offender	Incident	MJS process
Age	Type of infraction(s)	Date of reporting
Gender	Date of infraction(s)	Date: nth MJS decision
Race	Indicator: lethal weapons	Date of final punishment
Ethnicity	Indicator: major injuries	Date of military discharge
Education level	Indicator: deaths	Max punishment for offense
Incoming test scores	Indicator: drugs	Min punishment for offense
Home town at recruitment	Indicator: alcohol	Offender CO ID
Most recent evaluation	Geographic location incident	CO: Age
Indicator: MJS history	On/off base indicator	CO: REG
Past MJS incident: infraction	Installation ID	CO: Paygrade
Past MJS incident: outcome	Indicator: additional offenders	Number of CM judges
Indicator: recruitment waivers	# of additional offenders	Judge n: unique ID
Recruitment waiver: details	Add'l offender n: Mil status	Judge n: Age
Installation ID	Add'l offender n: Age	Judge n: REG
Installation location	Add'l offender n: REG	# prosecutors assigned to CM
Unit ID	# of victims	Prosecutor n: unique ID
Branch of service	Indicator: Victim(s)	Prosecutor n: Age
Paygrade	Victim n: Mil status	Prosecutor n: REG
Occupation code	Victim n: Age	# military lawyers for defense
Years of service (YOS)	Victim n: REG	Defense counsel n: unique ID
Military status		Defense counsel n: Age
Unit: Age distribution		Defense counsel n: REG
Unit: REG composition		Civilian defense counsel used
Unit: Paygrade composition		Size of CM panel
		CM member n: unique ID
		CM member n: Age
		CM member n: REG

Source: CNA.

Table 35. Requested MJS outcome variables by MJS phase and path

Incident processing	NJP	CM
Military LEA indicator	Indicator: NJP accepted	Indicator: pre-CM confinement
Military LEA ID: nth agency	NJP outcome	Pre-CM confinement length
Civilian LEA indicators	Indicator: Outcome appealed	Indicator: Plea offer
Civilian LEA ID: nth agency	NJP appeal outcome	Terms of nth plea deal
Indicator: action below NJP		Indicator: accept plea offer
Indicator: NJP offered		Indicator: non-CM resolution
CM Type		Indicator: Proceed to CM
		CM type
		CM outcome : findings
		CM outcome : sentence
		Indicator: appeal
		Result of appeal

Source: CNA.

Appendix B: Effects of Control Factors

This appendix provides information to summarize the impact of using control factors to generate the regression-adjusted ORs reported in the main text. We begin by describing the method used to measure the impact of controlling for other factors. Then, for each service, we provide the following information:

- Average values for offender-related control factors
- Estimates of the net impact of controlling for other factors for each outcome and REG group
- Lists of the top five factors that contributed the most to the net impact

Method for measuring the impacts of other factors

For a given MJS outcome, an unadjusted disparity measure captures the effects of REG plus some of the effects of other factors that are correlated with both REG and the outcome. A regression-adjusted disparity measure, in contrast, captures the between-group disparities that remain after the effects of all the other factors in the model have been controlled for. How much another factor contributes to the difference between the adjusted and unadjusted measures depends on (i) how much the factor average differs between REG groups and (ii) how much the factor affects the outcome. For example, a factor that (on average) substantively differs between men and women *and* has a large impact on the outcome will explain more of the difference between adjusted and unadjusted female-male disparity measures than a variable that substantively differs between men and women but only negligibly affects outcomes.

To assess the impact of controlling for the other factors in the logistic regression models, we measure both the net impact of all factors combined and the individual impact of each factor. An important caveat to this approach is that the estimated net impacts and the individual effects of each other factor are very dependent on the model specification: a different specification would change both types of estimates.

Net impact of all factors combined

To evaluate the net impacts of controlling for offender-, incident-, and process-related factors on REG disparities in the MJS, we estimate two linear probability models for each MJS outcome

that we analyzed. For each outcome, the first model includes as explanatory variables only the REG variables, and the estimated effects of each REG group represent ***unadjusted*** REG disparities. The second model for each outcome includes all the factors included in the logistic regression models used to estimate the ORs for each REG group. The estimated effects of REG from this second model represent ***adjusted*** REG disparities that control for REG-group-level differences in the other variables. The percentage differences between the unadjusted and adjusted disparities measure the net effect of controlling for the other factors.[59]

Because disparities can be positive or negative, interpreting the impact of percentage differences in disparity measurements can be difficult.[60] Therefore, we report the absolute value of the percentage differences and whether the disparity increased, decreased, or changed direction—from positive to negative or vice-versa. This means that the interpretation is the same, regardless of the sign of the unadjusted disparity measure: for positive (negative) unadjusted disparities, an increase means the disparity became more positive (more negative) and a decrease means the disparity became less positive (less negative).

Impacts of individual factors

To calculate how much each other factor contributed to the differences between the adjusted and unadjusted REG disparities, we eliminate group-level differences one variable at a time by setting each variable to its sample average, then we calculate the impact on the predicted outcome probability using the coefficients from the full regression model.

Effects on USAF outcome disparities

We evaluate the overall impact of controlling for other factors to generate the USAF ORs shown in Table 9 and identify which factors contribute the most to that impact.

[59] The percentage difference is calculated by subtracting the adjusted disparity from the unadjusted disparity and dividing by the adjusted disparity: (unadjusted – adjusted)/unadjusted.

[60] Specifically, if the unadjusted and adjusted disparities are the same sign, then a positive percentage difference means that the disparity decreased, and a negative percentage difference means that the disparity increased. If the unadjusted and adjusted disparities have different signs, the percentage difference is always positive, but the implications are different depending on the signs of each disparity. If the unadjusted disparity is negative and the adjusted disparity is positive, the disparity increased; if the unadjusted disparity is positive and the adjusted disparity is negative, the disparity decreased.

Average values for offender-related control factors

Table 36 displays selected offender (or accused offender) characteristics that are included as control factors in the logit models of USAF MJS outcomes.[61] Cells with blue (orange) shading identify REG groups with greater (smaller) average values than the values for all Airmen.

Table 36. Average values[a] for offender-related USAF control factors by REG

Variable	All	White	Black	Other	Non-Hisp	Hisp	Male	Female
Never married	62.2	61.1	67.6	70.0	61.3	68.1	62.0	62.9
Married	33.7	35.0	27.7	27.0	34.4	28.6	34.7	29.8
Formerly married	4.1	4.0	4.8	2.9	4.3	3.3	3.3	7.3
Parent	23.0	22.6	23.5	16.9	23.7	18.6	23.9	19.4
More than HS degree	15.2	15.0	15.3	11.2	15.9	11.0	14.5	17.9
Northeast HOR	9.8	10.6	8.2	7.4	9.9	9.1	9.9	9.3
Midwest HOR	16.9	19.6	11.0	10.5	18.4	7.4	17.1	16.2
South HOR	36.7	34.0	54.8	29.6	36.6	37.2	36.4	38.0
West HOR	19.5	19.9	7.8	38.0	17.7	31.4	19.2	20.5
Northeast UIC	1.0	1.0	1.1	0.7	1.1	0.7	1.1	0.9
Midwest UIC	5.5	5.9	4.5	4.1	5.9	3.1	5.7	4.9
South UIC	68.5	68.2	72.5	71.2	67.1	78.2	67.5	72.4
West UIC	15.5	16.1	11.7	14.7	16.2	11.1	16.0	13.7
Territory UIC	0.4	0.3	0.3	0.5	0.4	0.2	0.4	0.3
Foreign UIC	8.8	8.2	9.6	8.7	9.1	6.5	9.1	7.3
Junior enlisted	71.5	71.9	72.0	79.2	70.3	79.3	71.0	73.5
NCO	21.8	21.2	21.7	17.8	22.5	17.1	22.1	21.0
Senior NCO	6.7	6.9	6.2	3.0	7.2	3.6	7.0	5.5
Over age for PG	3.4	3.2	3.6	4.4	3.4	3.9	3.4	3.6
No waivers	92.9	92.3	94.5	93.4	92.8	93.1	92.7	93.5

Source: CNA calculated from DMDC data.

[a] All the control variables are categorical variables, so the average values are the percentage of each REG group (or the total sample) in the designated category.

[b] The shading indicates the statistical significance of each REG group's difference from All: 10 percent = light orange for negative, light blue for positive; 5 percent = medium orange for negative, medium blue for positive; and 1 percent = deep orange for negative, deep blue for positive.

[61] See the discussion of model specifications for a list of all the control variables used in the multivariate outcome models.

The data show that Black and White Airmen in the study data differ across several dimensions. For example, Black Airmen are ***less*** likely to be married, have an HOR or UIC that is outside the South, and be in an SNCO paygrade. Black Airmen are also ***more*** likely to be parents, be in a foreign UIC, and not have any enlistment waivers.

Non-Hispanic and Hispanic Airmen in the data also differ across many of these dimensions. Hispanic Airmen are ***less*** likely to be married, be parents, have more than a high school degree, be from the Northeast and Midwest, and be from a UIC outside of the South. Hispanic Airmen are ***more*** likely to be from the junior enlisted ranks.

Female and male Airmen differ in the following ways. Female Airmen are ***less*** likely to be married, be parents, be from the Northeast or Midwest, and be from a UIC outside of the South. Female Airmen are ***more*** likely to have more than a high school degree and be junior enlisted.

Estimated effects of control factors

The results for the impacts of control factors on the measured racial, ethnic, and gender disparities are show in Table 37, Table 38, and Table 39, respectively. In each table, the first column lists selected outcomes from the USAF disparity analysis. The second column shows the type of the ***unadjusted*** disparity (i.e., positive or negative) and the third column shows the extent to which controlling for other factors increases or decreases the unadjusted disparity for the identified outcome. The fourth column identifies the five factors that contributed most to the net impact for each outcome.

For example, adding the control factors to the "Investigated by AFOSI" outcome model increases the positive Black-White disparity by only 0.6 percent and increases the negative female-male disparity by 14.2 percent. In contrast, the control factors decrease the negative Hispanic-non-Hispanic disparity by 33.3 percent.

Black-White disparities

Adding the control variables has relatively small impacts on measured Black-White outcome disparities: 0.6 percent increase for being investigated by AFOSI, 2.0 percent decrease for tried by CM, and 8.5 percent decrease for found guilty at NJP. Occupation, marital status, HOR, prior NJP, and medical waivers are the main control factors that contribute to these net impacts on measured disparities.

The outcome on which the control factors have the largest net impact is being found guilty at CM: the control factors increased this negative disparity by 10.6 percent. The control factors that contributed most to this change are offense type, paygrade, HOR, and prior NJP.

Table 37. Effects of controlling for other factors on Black-White disparities in USAF outcomes

Outcome	Unadjusted disparity type	Net impact: Direction (absolute value of % change)	Top 5 contributing factors (listed in descending order of impact from left to right)
Investigated by AFOSI	Positive	Increase (0.6)	Occupation, Marital status, HOR, Prior NJP, Medical waiver
Tried by CM (total)	Positive	Decrease (2.0)	Prior NJP, Occupation, Marital status, HOR, Medical waiver
Tried by CM (SCM)	Positive	Decrease (6.8)	Prior NJP, Marital status, Occupation, HOR, Medical waiver
Tried by CM (SPCM)	Positive	Decrease (6.9)	Prior NJP, HOR, Occupation, Marital status, NCO
Tried by CM (GCM)	Positive	Decrease (4.8)	Marital status, Occupation, HOR, Prior NJP, Prior CM
Found guilty at NJP	Positive	Decrease (8.5)	Marital status, HOR, Occupation, Prior NJP, NCO
Found guilty at CM	Negative	Increase (10.6)	Military-specific offense, NCO, HOR, Sex offense, Prior NJP

Source: CNA.

Hispanic-non-Hispanic disparities

Compared to racial disparities, controlling for the other factors has a greater impact on the measured ethnic disparities associated with investigation and trial by CM. Controlling for other factors reduces the negative disparities for investigation by AFOSI, trial by any CM, trial by SPCM, and trial by GCM by 33.2, 13.7, 25.4, and 32.1 percent respectively. While the results differ slightly depending on the outcome, generally the top factors that contributed to these disparity reductions include HOR, parental status, occupation, over age for paygrade, conduct waivers, and prior NJP.

Female-male disparities

Unlike the ethnic disparities, controlling for the other factors increases most of the negative gender disparities. The one exception is the positive disparity for being found guilty at CM, which is reduced by 89 percent. The control factors that contribute to this decrease are sex- and drug-related offenses, NCO, military offense, and UIC.

Table 38. Effects of controlling for other factors on Hispanic-non-Hispanic disparities in USAF outcomes

Outcome	Unadjusted disparity type	Net impact: Direction (absolute value of % change)	Top 5 contributing factors (listed in descending order of impact from left to right)
Investigated by AFOSI	Negative	Decrease (33.3)	HOR, parent, Occupation, Over age for PG, Conduct waiver
Tried by CM (total)	Negative	Decrease (13.7)	Occupation, HOR, Parent, Prior NJP, UIC
Tried by CM (SCM)	Negative	Decrease (25.4)	Occupation, Prior NJP, HOR, Conduct waiver, Prior CM
Tried by CM (SPCM)	Negative	Increase (4.9)	Sr NCO, HOR, NCO, More than HS, Over age for PG
Tried by CM (GCM)	Negative	Decrease (32.1)	Occupation, Parent, Prior CM, UIC, Prior NJP
Found guilty at NJP	Negative	Decrease (4.1)	HOR, Occupation, Parent, Conduct Waiver, UIC
Found guilty at CM	Negative	Decrease (3.8)	Sex offense, Drug offense, HOR, UIC, Military offense

Source: CNA.

Table 39. Effects of controlling for other factors on female-male disparities in USAF outcomes

Outcome	Unadjusted disparity type	Net impact: Direction (absolute value of % change)	Top 5 contributing factors (listed in descending order of impact from left to right)
Investigated by AFOSI	Negative	Increase (14.3)	Occupation, Marital status, NCO, Sr NCO, Medical waiver
Tried by CM (total)	Negative	Increase (12.6)	Marital status, Occupation, NCO, Medical waiver, Sr NCO
Tried by CM (SCM)	Negative	Increase (9.4)	NCO, Marital Status, Medical Waiver, Parent, Dep waiver
Tried by CM (SPCM)	Negative	Increase (11.0)	Marital status, Occupation, NCO, Parent, Sr NCO
Tried by CM (GCM)	Negative	Increase (8.3)	Marital status, NCO, HOR, Medical waiver, Sr NCO
Found guilty at NJP	Negative	Increase (14.6)	Marital status, NCO, Sr NCO, Prior CM, Medical waiver
Found guilty at CM	Positive	Decrease (89.2)	Sex offense, Drug offense, NCO, Military offense, UIC

Source: CNA.

Effects on USA outcome disparities

We evaluate the overall impact of controlling for other factors to generate the USA ORs shown in Table 15 and identify which factors contributed the most to that impact.

Average values for offender-related control factors

Table 40 displays selected offender (or accused offender) characteristics that are included as control variables in the logistic regression models of USA MJS outcomes.[62] Cells with blue (orange) shading identify REG groups with greater (smaller) average values than the values for all Soldiers.

Black and White Soldiers in the sample differ across several dimensions. For example, Black Soldiers were ***less*** likely to have an HOR or UIC outside the southern census region and be in a junior enlisted paygrade. Black Soldiers were ***more*** likely to be formerly married, parents, educated beyond a high school degree, assigned to a foreign UIC, and over age for their paygrades. They were also less likely to have enlisted without any type of waiver.

Non-Hispanic and Hispanic Soldiers also differ across many of these dimensions. Hispanic Soldiers were ***less*** likely to have more than a high school degree, have an HOR outside of the western census region, and be over age for their paygrades. Hispanic Soldiers were ***more*** likely to be from the junior enlisted ranks.

Female and male Soldiers in the sample differ in the following ways. Female Soldiers were ***less*** likely to be married, parents, from an HOR outside of the South, and assigned to UICs from the Northeast and the West. Female Soldiers were ***more*** likely to have more than a high school degree, be junior enlisted, be over age for their paygrades, and have no enlistment waivers.

Estimated effects of control variables

The results for racial, ethnic, and gender disparities are show in Table 41, Table 42, and Table 43, respectively. In each table, the first column lists selected outcomes from the USA disparity analysis. The second column shows the type of the ***unadjusted*** disparity (i.e., positive or negative) and the third column shows the extent to which controlling for other factors increases or decreases the unadjusted disparity for the identified outcome. The fourth column identifies the five factors that contributed most to the net impact for each outcome.

For example, adding control variables to the "Investigated" outcome model increases the positive Black-White disparity by 5.6 percent and the negative gender disparity by 10.8

[62] See the discussion of model specifications for a list of all the control variables used in the multivariate outcome models.

percent. Adding the control factors changes the negative Hispanic-non-Hispanic investigation disparity to positive and the absolute value of the size of the change is 167.8 percent.

Table 40. Average values[a] for offender-related USA control factors by REG

Variable	All	White	Black	Other	Non-Hisp	Hisp	Male	Female
Never married	54.2	55.6	53.2	56.6	54.1	54.6	54.3	54.0
Married	41.6	40.9	41.2	40.0	41.6	41.6	42.4	37.2
Formerly married	4.1	3.5	5.6	3.4	4.2	3.7	3.3	8.8
Parent	31.7	29.5	35.6	27.5	31.7	31.3	32.6	26.2
More than HS degree	11.9	10.3	13.6	20.2	12.2	10.4	10.9	17.4
Northeast HOR	11.7	12.0	11.2	9.3	11.8	11.3	11.9	10.8
Midwest HOR	16.9	19.9	10.7	8.6	18.9	5.8	17.6	12.7
South HOR	46.5	41.4	68.8	24.4	47.8	39.3	45.4	52.6
West HOR	22.1	24.5	8.0	47.2	19.8	34.9	22.3	21.1
Northeast UIC	3.8	3.8	3.6	3.5	3.7	3.7	3.9	2.9
Midwest UIC	7.8	8.1	7.6	6.9	7.9	7.8	7.6	9.3
South UIC	60.0	60.0	61.9	54.0	60.1	60.1	59.9	60.9
West UIC	18.5	19.0	15.2	24.1	18.4	18.6	18.7	16.8
Territory UIC	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Foreign UIC	8.5	7.7	10.1	10.3	8.4	8.6	8.4	9.0
Junior enlisted	71.0	72.9	69.9	72.7	70.4	74.4	70.2	76.0
NCO	20.8	20.5	20.2	20.8	21.2	19.0	21.4	17.7
Senior NCO	8.1	6.6	9.9	6.4	8.4	6.7	8.4	6.2
Over age for PG	5.8	5.0	7.2	9.0	5.9	5.7	5.8	6.0
No waivers	89.2	88.3	91.1	90.0	89.0	89.8	89.0	90.1

Source: CNA calculated from DMDC data.

[a] All the control variables are categorical variables, so the average values are the percentage of each REG group (or the total sample) in the designated category.

[b] The shading indicates the statistical significance of each REG group's difference from All: 10 percent = light orange for negative, light blue for positive; 5 percent = medium orange for negative, medium blue for positive; and 1 percent = deep orange for negative, deep blue for positive.

Black-White disparities

For the USA, adding control factors increases the positive Black-White disparities for the unconditional first-observed investigation, NJP, and CM outcomes. Factors that contribute most to these increases are SNCO status, education beyond a high school diploma, whether the Soldier had a conduct waiver, and UIC region.

In addition, adding the control factors shrinks the negative conditional disparities for NJP and CM guilty findings by approximately 6 percent and 259 percent, respectively. Offense types are the main contributors to the very large impact on CM guilty findings.

Table 41. Effects of controlling for other factors on Black-White disparities in USA outcomes

Outcome	Unadjusted disparity type	Net impact: Direction (absolute value of % change)	Top 5 contributing factors (listed in descending order of impact from left to right)
Investigated	Positive	Increase (5.6)	Sr NCO, Education, Occupation, Conduct waiver, Over age
NJP proceedings	Positive	Increase (7.7)	Sr NCO, Education, Over age, Conduct waiver, Marital status
Referred to CM	Positive	Increase (10.6)	Education, Sr NCO, UIC, Conduct waiver, Dep waiver
Referred to CM (SCM)	Positive	Decrease (1.5)	Prior NJP, HOR, Marital status, Parent, UIC
Referred to CM (SPCM)	Positive	Increase (1.4)	Education, Sr NCO, UIC, Occupation, Conduct waiver
Referred to CM (GCM)	Positive	Increase (21.5)	Sr NCO, Education, UIC, Conduct waiver, Over age
NJP guilty finding	Negative	Decrease (5.7)	Occupation, Serious offense, Prior NJP, Parent, Military-specific offense
CM guilty finding	Negative	Increase (259.3)	HOR, Military-specific offense, Sex offense, Other civilian offenses, NCO

Source: CNA.

Hispanic-non-Hispanic disparities

For two of the main first-observed outcomes—investigation and referral to any type of CM—adding the control factors to the model causes the unadjusted negative disparities to become positive. For the third first-observed outcome—being subject to NJP proceedings—the negative disparity decreases and, thus, also becomes less negative. The control variables that contribute most to these impacts include HOR, prior NJP, conduct waiver, drug waiver, and marital status. Turning to conditional outcomes, adding the control factors changes the negative unadjusted disparity for being found guilty at NJP to positive, and decreases the negative unadjusted disparity for being found guilty at CM. Offense-related factors contribute most to these effects.

Table 42. Effects of controlling for other factors on Hispanic-non-Hispanic disparities in USA outcomes

Outcome	Unadjusted disparity type	Net impact: Direction (absolute value of % change)	Top 5 contributing factors (listed in descending order of impact from left to right)
Investigated	Negative	Change to positive (167.8)	HOR, Prior NJP, Conduct waiver, Drug waiver, Over age
NJP proceedings	Negative	Decrease (66.5)	HOR, Marital status, Conduct waiver, Prior NJP, Drug waiver
Referred to CM	Negative	Change to positive (396.8)	Prior NJP, HOR, Marital status, Conduct waiver, Drug waiver
Referred to CM (SCM)	Negative	Decrease (77.2)	HOR, Prior NJP, Occupation, Marital status, Conduct waiver
Referred to CM (SPCM)	Negative	Decrease (96.2)	Prior NJP, Marital status, Drug waiver, Dep waiver, Conduct waiver
Referred to CM (GCM)	Positive	Increase (146.6)	Prior NJP, HOR, Marital status, Conduct waiver, Drug waiver
NJP guilty finding	Negative	Change to positive (117.9)	Total offense count, Drug offense, Sex offense, NCO, UIC
CM guilty finding	Negative	Decrease (79.6)	Sex offense, HOR, Military-specific offense, Civilian-analogue offense, Drug offense

Source: CNA.

Female-male disparities

For all outcomes, except one (CM guilty finding), the unadjusted disparities are negative and adding the control factors increases estimated outcome disparities causing them to become more negative. For CM guilty findings, adding the control factors changes the measured disparity from positive to negative. The factors that contribute most these disparity changes are HOR, SNCO status, NCO status, and Marital status.

Table 43. Effects of controlling for other factors on female-male disparities in USA outcomes

Outcome	Unadjusted disparity type	Net impact: Direction (absolute value of % change)	Top 5 contributing factors (listed in descending order of impact from left to right)
Investigated	Negative	Increase (10.8)	HOR, Sr NCO, NCO, Marital status, Prior NJP
NJP proceedings	Negative	Increase (95.8)	Sr NCO, NCO, HOR, Occupation, Marital status
Referred to CM	Negative	Increase (7.2)	Occupation, Marital status, HOR, NCO, Sr NCO
Referred to CM (SCM)	Negative	Increase (2.6)	Marital status, NCO, HOR, Prior NJP, UIC
Referred to CM (SPCM)	Negative	Increase (8.1)	Marital status, Occupation, HOR, Prior NJP, Sr NCO
Referred to CM (GCM)	Negative	Increase (7.8)	Occupation, Marital Status, Sr NCO, HOR, NCO
NJP guilty finding	Negative	Increase (16.5)	Military-specific offense, NCO, Sex offense, Sr NCO, Parent
CM guilty finding	Positive	Change to negative (257.2)	Sex offense, Military-specific offense, Civilian-analogue offense, Parent, Drug offense

Source: CNA.

Effects on USMC outcome disparities

We evaluate the overall impact of controlling for other factors to generate the USMC ORs shown in Table 21 and identify which factors contribute the most to that impact.

Average values for offender-related control factors

Table 44 displays selected offender (or accused offender) characteristics that are included as control variables in the logistic regression models of USMC MJS outcomes.[63] Cells with blue (orange) shading identify REG groups with greater (smaller) average values than the values for all Marines.

[63] See the discussion of model specifications for a list of all the control variables used in the multivariate outcome models.

Table 44. Average values[a] for selected USMC control variables by REG

Variable	All	White	Black	Other	Non-Hisp	Hisp	Male	Female
Never married	77.1	78.3	75.4	78.7	76.2	80.3	76.8	80.4
Married	21.1	20.1	22.1	19.6	21.9	18.1	21.6	16.0
Formerly married	1.8	1.5	2.4	1.7	1.8	1.7	1.6	3.6
Parent	13.5	12.1	17.3	12.7	13.8	12.2	13.9	9.4
More than HS degree	3.4	3.0	4.0	4.2	3.6	2.5	3.2	5.2
Northeast HOR	14.7	14.6	16.7	11.4	15.3	12.6	14.7	15.4
Midwest HOR	21.5	23.2	14.5	13.5	24.7	9.3	21.5	20.7
South HOR	38.7	36.9	59.2	26.1	39.4	36.0	38.7	38.4
West HOR	24.1	24.5	8.6	45.5	19.8	40.2	24.1	24.4
Northeast UIC	0.5	0.4	0.6	0.4	0.5	0.4	0.5	0.4
Midwest UIC	0.7	0.7	0.7	0.6	0.8	0.5	0.7	0.5
South UIC	49.3	48.3	62.8	37.6	52.1	38.5	46.4	78.5
West UIC	43.2	44.5	28.3	53.2	40.1	54.6	46.0	14.3
Territory UIC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Foreign UIC	4.5	4.1	5.8	6.0	4.6	4.0	4.4	4.9
Junior enlisted	74.3	76.2	71.6	73.0	72.9	79.6	74.0	77.7
NCO	17.7	17.2	16.7	18.9	18.9	13.1	17.7	16.9
SNCO	6.5	5.5	9.0	6.7	6.6	6.2	6.7	4.6
Senior SNCO	1.5	1.2	2.7	1.3	1.6	1.1	1.5	0.8
Over age for PG	2.6	2.4	3.5	3.3	2.8	2.1	2.7	2.3
No waivers	87.1	87.1	87.1	87.0	87.2	86.8	87.3	85.5

Source: CNA calculated from DMDC data.
[a] All the control variables are categorical variables, so the average values are the percentage of each REG group (or the total sample) in the designated category.
[b] The shading indicates the statistical significance of each REG group's difference from All: 10 percent = light orange for negative, light blue for positive; 5 percent = medium orange for negative, medium blue for positive; and 1 percent = deep orange for negative, deep blue for positive.

Black and White Marines in the sample differ across several dimensions. For example, Black Marines are ***less*** likely to never have been married, have an HOR in the Midwest or the West, be in a UIC in the West, and be in junior enlisted or NCO paygrades. Black Marines are ***more*** likely to be parents, have more than a high school degree, be in a foreign UIC, and be over age for their paygrades.

Non-Hispanic and Hispanic Marines also differ across many of these dimensions. Hispanic Marines are ***less*** likely to be parents, have more than a high school degree, have an HOR or UIC

outside of the West, and be over age for their paygrades. Hispanic Marines are ***more*** likely to be never married and be junior enlisted.

Female and male Marines in the sample differ in the following ways. Female Marines are ***less*** likely to be married, be parents, have a UIC outside of the South, and be over age for their paygrades. Female Marines are ***more*** likely to have more than a high school degree, be junior enlisted, and have had enlistment waivers.

Estimated effects of control variables

The results for racial, ethnic, and gender disparities for the USMC are show in Table 45, Table 46, and Table 47 below. In each table, the first column lists selected outcomes from the USMC disparity analysis. The second column shows the type of the ***unadjusted*** disparity (i.e., positive or negative) and the third column shows the extent to which controlling for other factors increases or decreases the unadjusted disparity for the identified outcome. The fourth column identifies the five factors that contributed most to the net impact for each outcome.

For example, adding control variables to the "Investigated by NCIS" outcome model does not change the estimated Black-White disparity, but does change the estimated ethnic and gender disparities. The Hispanic-non-Hispanic disparity changes from negative to positive and the negative female-male disparity increases, becoming more negative.

Black-White disparities

For most of the outcomes adding control variables decreases the Black-White disparities. The factors that contribute most to the decreases for investigation by NCIS and CM cases opened are occupation, HOR, parental status, prior NJP and marital status. In addition, having a prior drug waiver also affects the likelihood of having a case referred to CM and a pre-trial plea agreement. The two outcomes for which adding control variables increases estimated racial disparities are NJP and CM guilty findings: for NJP, the positive unadjusted disparity increases, becoming more positive; for CM, the negative unadjusted disparity becomes positive. The factors that contribute most to the change in the NJP disparity are SNCO and Senior SNCO status, education level, being over age for a paygrade, and having a prior conduct waiver. The factors that contribute most to the change in the CM disparity are occupation, HOR, UIC, and paygrade.

Table 45. Effects of controlling for other factors on Black-White disparities in USMC outcomes

Outcome	Unadjusted disparity type	Net impact: Direction (absolute value of % change)	Top 5 contributing factors (listed in descending order of impact from left to right)
Investigated by NCIS	Positive	No change (0.0)	Occupation, HOR, Parent, Prior NJP, Marital status
CM case opened (Total)	Positive	Decrease (4.2)	HOR, Occupation, Prior NJP, Parent, Marital status
CM case opened (SCM)	Positive	Decrease (6.4)	HOR, Prior NJP, NCO, Marital Status
CM case opened (SPCM)	Positive	Decrease (1.9)	HOR, Occupation, Prior NJP, Marital status, Parent
CM case opened (GCM)	Positive	Decrease (8.0)	Occupation, HOR, Parent, UIC, Prior NJP
Referred to CM	Negative	Decrease (22.4)	Occupation, Prior NJP, Drug waiver, Over age, UIC
Pre-trial plea agreement	Negative	Decrease (19.6)	HOR, Prior NJP, UIC, Occupation, Drug waiver
NJP guilty finding	Positive	Increase (10.5)	SNCO, Sr SNCO, Education, Over age, Conduct waiver
CM guilty finding	Negative	Change to positive (168.3)	Occupation, HOR, SNCO, UIC, NCO

Source: CNA.

Hispanic-non-Hispanic disparities

Adding control variables changes negative unadjusted ethnic disparities to positive for five of the nine outcomes shown in Table 46. Four of these outcomes are first-observed outcomes: investigation by NCIS, having any CM case opened, having an SPCM case opened, and being found guilty at NJP. The fifth outcome is a conditional outcome—being referred to CM. Control variables that contributed most to these changes are HOR, occupation, marital status, parental status, and UIC.

Adding control variables also increases the two positive unadjusted disparities for having a GCM case opened and being found guilty at CM. The factors that contribute most to the latter change are UIC, NCO status, drug waivers, HOR, and prior NJP.

Table 46. Effects of controlling for other factors on Hispanic-non-Hispanic disparities in USMC outcomes

Outcome	Unadjusted disparity type	Net impact: Direction (absolute value of % change)	Top 5 contributing factors (listed in descending order of impact from left to right)
Investigated by NCIS	Negative	Change to positive (166.5)	HOR, Occupation, Marital status, Parent, UIC
CM case opened (Total)	Negative	Change to positive (103.8)	Occupation, HOR, Marital status, Parent, Conduct waiver
CM case opened (SCM)	Negative	Decrease (53.0)	Occupation, UIC, HOR, Marital status, Dep waiver
CM case opened (SPCM)	Negative	Change to positive (122.1)	Occupation, Marital status, HOR, Parent, Dep waiver
CM case opened (GCM)	Positive	Increase (75.2)	HOR, Marital status, Parent, Conduct waiver, Prior NJP
Referred to CM	Negative	Change to positive (31330.5)	HOR, Occupation, UIC, Other waiver, Marital statusy
Pre-trial plea agreement	Negative	Decrease (45.5)	UIC, HOR, Occupation, Marital status, NCO
NJP guilty finding	Negative	Change to positive (778.8)	Occupation, HOR, UIC, Conduct waiver, Parent
CM guilty finding	Positive	Increase (225.0)	UIC, NCO, Drug Waiver, HOR, Prior NJP

Source: CNA.

Female-male disparities

Adding control variables increases most of the negative female-male disparities for first-observed outcomes—investigation, any CM case opened, SPCM and GCM cases opened, and NJP guilty finding. Three factors consistently contribute to these results: marital status and being in staff NCO and senior staff NCO paygrades.

In contrast, adding the control variables decreases the disparities associated with the conditional outcomes—referred to CM, CM pre-trial plea agreement, and CM guilty finding. The only factors that consistently contribute to these results are various paygrade categories.

Table 47. Effects of controlling for other factors on female-male disparities in USMC outcomes

Outcome	Unadjusted disparity type	Net impact: Direction (absolute value of % change)	Top 5 contributing factors (listed in descending order of impact from left to right)
Investigated by NCIS	Negative	Increase (19.6)	SNCO, Sr SNCO, Occupation, Marital status, Prior NJP
CM case opened (Total)	Negative	Increase (5.9)	SNCO, Marital status, Sr SNCO, Prior NJP, Dep waiver
CM case opened (SCM)	Negative	Decrease (18.5)	Occupation, NCO, Education, Parent, Prior CM
CM case opened (SPCM)	Negative	Increase (8.5)	Marital Status, SNCO, Sr SNCO, Prior NJP, HOR
CM case opened (GCM)	Negative	Increase (19.5)	Occupation, Marital status, SNCO, Sr SNCO, UIC
Referred to CM	Positive	Decrease (20.4)	NCO, Prior NJP, Education, Drug Waiver, Other waiver
Pre-trial plea agreement	Negative	Decrease (12.5)	Occupation, Marital status, UIC, NCO, SNCO
NJP guilty finding	Negative	Increase (17.9)	SNCO, Sr SNCO, Marital status, UIC, Over age
CM guilty finding	Negative	Decrease (2.8)	NCO, Occupation, Sr SNCO, HOR, Prior NJP

Source: CNA.

Effects on USN outcome disparities

We evaluate the overall impact of controlling for other factors to generate the USN ORs shown in Table 27 and identify which factors contribute the most to that impact.

Average values for offender-related control factors

Table 48 displays selected offender (or accused offender) characteristics that are included as control variables in the logistic regression models of USN MJS outcomes.[64] Cells with blue

[64] See the discussion of model specifications for a list of all the control variables used in the multivariate outcome models.

(orange) shading identify REG groups with greater (smaller) average values than the values for all Sailors.

Table 48. Average values[a] for selected USN control variables by REG

Variable	All	White	Black	Other	Non-Hisp	Hisp	Male	Female
Never married	69.2	69.3	70.2	66.4	64.8	69.1	66.9	78.1
Married	28.9	28.3	29.2	32.2	32.8	29.8	31.2	20.1
Formerly married	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3
Parent	20.2	19.1	24.2	20.4	23.9	20.3	22.0	13.7
More than HS degree	10.1	9.4	11.6	11.0	11.2	8.7	9.5	12.4
Northeast HOR	12.7	13.1	14.5	8.6	12.9	12.2	12.8	12.4
Midwest HOR	16.3	18.8	12.5	12.2	18.6	6.5	16.5	15.2
South HOR	42.6	39.3	61.0	34.3	41.2	39.5	42.2	44.1
West HOR	25.8	26.5	9.6	40.9	24.6	38.0	25.8	25.9
Northeast UIC	1.9	2.1	1.3	1.7	2.1	1.6	2.2	0.6
Midwest UIC	41.3	42.8	43.0	30.6	33.3	41.9	39.4	48.7
South UIC	20.9	21.1	21.7	19.5	23.0	19.1	20.8	21.1
West UIC	9.5	9.4	7.0	13.2	10.9	10.9	9.8	8.5
Territory UIC	0.6	0.5	0.5	0.9	0.7	0.6	0.6	0.4
Foreign UIC	5.0	4.1	6.0	7.6	5.9	5.3	5.3	4.0
Junior enlisted	70.4	70.0	70.9	69.4	64.7	72.1	67.9	79.8
NCO	23.8	23.6	23.3	26.5	27.6	23.9	25.5	17.4
Senior NCO	5.8	6.3	5.8	4.1	7.7	4.0	6.6	2.7
Over age for PG	3.5	2.7	5.3	4.6	3.7	3.4	3.5	3.4
No waivers	89.6	89.3	90.4	89.6	90.0	89.3	89.6	89.8

Source: CNA calculated from DMDC data.

[a] All the control variables are categorical variables, so the average values are the percentage of each REG group (or the total sample) in the designated category.

[b] The shading indicates the statistical significance of each REG group's difference from All: 10 percent = light orange for negative, light blue for positive; 5 percent = medium orange for negative, medium blue for positive; and 1 percent = deep orange for negative, deep blue for positive.

Black and White Sailors differ across several dimensions. For example, Black Sailors are ***less*** likely to have a Midwest HOR, be in a UIC outside the South or Midwest, and be an NCO. Black Sailors are ***more*** likely to be never married, be a parent, have more than a high school degree, be over age for their paygrades, and not have any enlistment waivers.

Non-Hispanic and Hispanic Sailors also differ across many of these dimensions. Hispanic Sailors are ***less*** likely to have more than a high school degree, have an HOR outside of the West, be an SNCO, and be over age for their paygrades. Hispanic Sailors are ***more*** likely to be married and in a foreign UIC.

Female and male Sailors differ in the following ways. Female Sailors are ***less*** likely to be married, be parents, and be in UICs from the Northeast or the West. Female Sailors are ***more*** likely to have more than a high school degree and be junior enlisted.

Estimated effects of control variables

The results for racial, ethnic, and gender disparities for the USN are show in Table 49, Table 50, and Table 51 below. In each table, the first column lists selected outcomes from the USN disparity analysis. The second column shows the type of the ***unadjusted*** disparity (i.e., positive or negative) and the third column shows the extent to which controlling for other factors increases or decreases the unadjusted disparity for the identified outcome. The fourth column identifies the five factors that contributed most to the net impact for each outcome.

For example, adding control variables to the "Investigated by NCIS" outcome model increases all the unadjusted disparities: the positive Black-White and Hispanic-non-Hispanic disparities increase by 1.1 percent and 60.5 percent, respectively. The negative female-male disparity increases by 18.5 percent.

Black-White disparities

Adding control variables increases the positive unadjusted disparities for the first-observed outcomes—investigation by NCIS and all CM outcomes. The factors that contribute most to these increases are education level, NCO status, over age for paygrade, and having a conduct and dependent waivers at enlistment.

In contrast, adding control variables decreases the negative disparities for the two outcomes that are conditional on having opened cases—referred to CM and reaching a pre-trial plea agreement. Factors that contribute to both decreases are UIC and NCO status.

Finally, adding control variables increases the negative racial disparity for a CM guilty finding by more than 13 percent from a large negative baseline. The factors that contribute most to this change are HOR, UIC, parenthood, NCO, and "other" enlistment waiver.

Table 49. Effects of controlling for other factors on Black-White disparities in USN outcomes

Outcome	Unadjusted disparity type	Net impact: Direction (absolute value of % change)	Top 5 contributing factors (listed in descending order of impact from left to right)
Investigated by NCIS	Positive	Increase (1.1)	Education, NCO, Over age, Conduct waiver, Dep waiver
CM case opened (Total)	Positive	Increase (9.4)	Education, NCO, Over Age, Conduct waiver, Dep waiver
CM case opened (SPCM)	Positive	Increase (12.7)	Education, UIC, Over age, NCO, Parent
CM case opened (GCM)	Positive	Increase (10.4)	HOR, Education, NCO, Dep waiver, Conduct waiver
Referred to CM	Negative	Decrease (0.9)	UIC, Other waiver, Dep waiver, Sr NCO, NCO
Pre-trial plea agreement	Negative	Decrease (12.3)	UIC, HOR, Parent, NCO, Medical waiver, Prior CM
CM guilty finding	Negative	Increase (13.7)	HOR, UIC, Parent, NCO, Other waiver

Source: CNA.

Hispanic-non-Hispanic disparities

Controlling for other factors increases the positive ethnic disparities for three of the four unconditional first-observed outcomes (i.e., investigation by NCIS, having any CM case opened, and having an SPCM case opened). The control factors that contribute most to these effects are HOR, parenthood, and having a dependent waiver. The conditional outcomes for referred to CM and CM guilty finding also increase when other factors are added to the model. In contrast, controlling for other factors greatly decreases the conditional outcome of pre-trial plea agreement. The factors that contribute most to this decrease are HOR, UIC, and occupation.[65]

[65] Note that many of the percentage changes in disparities in Table 50 appear quite large. However, when looking at how adding control variables changes estimated ethnic disparities, it is important to remember that baseline disparities are quite small, so small changes can translate into large percentage changes.

Table 50. Effects of controlling for other factors on Hispanic-non-Hispanic disparities in USN outcomes

Outcome	Unadjusted disparity type	Net impact: Direction (absolute value of % change)	Top 5 contributing factors (listed in descending order of impact from left to right)
Investigated by NCIS	Positive	Increase (60.5)	HOR, UIC, Parent, Drug waiver, Dep waiver
CM case opened (Total)	Positive	Increase (432.5)	HOR, Parent, Occupation, Dep waiver, Marital status
CM case opened (SPCM)	Positive	Increase (357.9)	HOR, Marital status, Dep waiver, Medical waiver, Prior NJP
CM case opened (GCM)	Negative	Decrease (46.7)	Parent, UIC, Occupation, Dep waiver, Over age
Referred to CM	Negative	Increase (5.7)	HOR, Prior CM, Occupation, NCO, UIC
Pre-trial plea agreement	Positive	Decrease (94.3)	HOR, UIC, Occupation, Parent, Conduct waiver
CM guilty finding	Positive	Increase (69.3)	HOR, Marital Status, NCO, SNCO, Parent

Source: CNA.

Female-male disparities

Controlling for other factors increases the negative unadjusted gender disparities for the first-observed outcomes. The factors that contributed most to these effects are NCO and senior NCO status and occupation. Controlling for other factors has different effects on the conditional MJS outcomes: it decreases positive disparities for referral to CM and CM guilty finding and increases a negative disparity for pre-trial plea agreement.

Table 51. Effects of controlling for other factors on female-male disparities in USN outcomes

Outcome	Unadjusted disparity type	Net impact: Direction (absolute value of % change)	Top 5 contributing factors (listed in descending order of impact from left to right)
Investigated by NCIS	Negative	Increase (18.8)	Sr NCO, NCO, Occupation, HOR, Over age
CM case opened (Total)	Negative	Increase (14.5)	NCO, Sr NCO, Occupation, Dep waiver, Over age
CM case opened (SPCM)	Negative	Increase (14.5)	NCO, Sr NCO, Parent, Over age, Dep waiver
CM case opened (GCM)	Negative	Increase (10.2)	Sr NCO, NCO, Occupation, Marital status, Dep waiver
Referred to CM	Positive	Change to negative (188.0)	Occupation, Marital status, Prior CM, UIC, Education
Pre-trial plea agreement	Negative	Increase (1.9)	UIC, HOR, Parent, Education, Other waiver
CM guilty finding	Positive	Change to negative (134.8)	UIC, HOR, NCO, Other waiver, Drug waiver

Source: CNA.

Figures

Tables

Abbreviations

ACMIS	Army Courts-Martial Information System
ADMF	Active Duty Master File
AFJIS	Air Force Justice Information System
AFOSI	Air Force Office of Special Investigations
ALERTS	Army Law Enforcement Reporting and Tracking System
AMJAMS	Automated Military Justice Analysis and Management System
CCN	case control number
CID	Criminal Investigation Division
CLEOC	Consolidated Law Enforcement Operation Center
CMS	Case Management System
CM	court-martial
CO	commanding officer
DCMS	Disciplinary Case Management System
DHS	Department of Homeland Security
DI	disproportionality index
DIBRS	Defense Incident-Based Reporting System
DMDC	Defense Manpower Data Center
DOD	Department of Defense
DOJ	Department of Justice
DON	Department of the Navy
EDIPI	electronic data interchange personal identifiers
FACTS	Field Activity Tracking System
FY	fiscal year
FYDP	Future Year Defense Program
GAO	Government Accountability Office

GCM	general court-martial
HCPRD	Human Capital Production
HOR	home of record
HS	high school
JAG	Judge Advocate General
LEA	law enforcement agency
LSST	legal services support team
MCIO	military criminal investigative organizations
MCM	Manual for Courts-Martial
MEPCOM	Military Entrance Processing Command
MEPS	Military Entrance Processing Stations
MILDEP	military department
MJO	Military Justice Online
MJS	military justice system
MOU	memorandum of understanding
MPI	military police investigation
NCIS	Naval Criminal Investigative Service
NCO	non-commissioned officer
NCORS	Naval Court-Martial Reporting System
NDAA	National Defense Authorization Act
NIBRS	National Incident Based Reporting System
NJP	nonjudicial punishment
ODEI	Office for Diversity, Equity, and Inclusion
ORION	OSI Records, Investigations & Operations Network
OSD	Office of the Secretary of Defense
OSI	Office of Special Investigations
QCAR	Quarterly Crime Activity Report
REG	race, ethnicity, or gender

RLSO	Regional legal services offices
SCM	summary court-martial
SFMIS	Security Forces Management Information System
SJA	staff judge advocate
SME	subject matter expert
SNCO	staff non-commissioned officer
SPCM	special court martial
SSN	Social Security number
TFDW	Total Force Data Warehouse
USAF	United States Air Force
USC	United States Code
USCG	United States Coast Guard
USMC	United States Marine Corps
USN	United States Navy
UCMJ	Uniform Code of Military Justice
UIC	unit identification code

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