U.S. Army Audit Agency

Evaluating the Occupational Physical Assessment Test

Report A-2021-0052-FIZ **8 June 2021**

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Executive Summary

Report A-2021-0052-FIZ
8 June 2021

Evaluating the Occupational Physical Assessment Test

What We Audited

The intended goal of the Army's Occupational Physical Assessment Test (OPAT) is to improve readiness and accession quality by decreasing injury and attrition rates. OPAT consists of four events: a standing long jump, seated power throw, strength deadlift, and interval aerobic runs. We internally generated this audit to determine if OPAT achieved these intended outcomes. In addition, even though OPAT was designed as a gender-neutral test, we reviewed gender testing differences as they applied to OPAT.

What We Found

OPAT didn't achieve intended outcomes of reducing physical training injuries and associated attrition rates. The test was implemented in calendar year (CY) 17. However, physical training injury rates in CYs 14–19 increased by an average of about 3 percent and associated attrition increased by an average of about 1.6 percent.

Impact

There wasn't a significant differentiation between assessment levels, a consistent baseline, and a formal process for monitoring and managing OPAT implementation progress. Thus, the Army is at risk of not reducing the number of Soldiers who become injured and leave the Army before completing their initial contract, reducing Army readiness. Almost 18,000 Soldiers at initial military training and about 6,000 Soldiers at duty station left the Army in CYs 17–19 due to physical training-related issues, and it cost the Army about $77,800 to train each new Soldier at initial military training during this timeframe.

Point of Contact

For questions about this report, please contact (b) (6)

Recommendations

Commander, U.S. Army Training and Doctrine Command

Recommendation 1: Conduct a formal evaluation of the OPAT physical fitness categories to determine if increasing the difficulty levels would better differentiate physical fitness abilities.

Recommendation 2: Establish a baseline of injury and attrition data, as well as a formal means to regularly gather and monitor OPAT data.

Official Army Position and Command Comments

Training and Doctrine Command concurred with both recommendations. In its response, the command estimated that attrition costs related to musculoskeletal injuries exceeded $1.4 billion annually due to unexpected injuries. Providing additional resources to reduce musculoskeletal injuries will save the Army significant expenses in recruiting, retention, and treatment.

The Office of the Deputy Chief of Staff, G-1 provided the official Army position and concurred with our findings, conclusion, and recommendations. The office also concurred with the Training and Doctrine Command's planned actions.

Annex C contains the official Army position and verbatim command comments.

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Abbreviations

CY	Calendar Year
EXORD	Execution Order
FRAGO	Fragmentary Order
IMT	Initial Military Training
MEDCOM	U.S. Army Medical Command
MOS	Military Occupational Specialty
OPAT	Occupational Physical Assessment Test
TRADOC	U.S. Army Training and Doctrine Command

Achieving Intended Outcomes

Objective

To determine if the Army's Occupational Physical Assessment Test achieved intended outcomes of reducing injuries and attrition rates.

Conclusion

The Occupational Physical Assessment Test (OPAT) didn't achieve intended outcomes of reducing physical training injuries and associated attrition rates. The test was introduced in FY 17; however, in calendar years (CYs) 14–19, physical training injury rates increased by an average of about 3 percent and associated attrition increased by an average of about 1.6 percent.

HQDA Execution Order (EXORD) 202-16[1] established the OPAT program to improve readiness and accession quality by decreasing injury and attrition rates. The test was designed to help predict a recruit's physical fitness qualifications for physically demanding military occupational specialties (MOSs) and put the best qualified recruit in the correct MOS. The OPAT was designed as a gender-neutral assessment involving four events that, taken together, measure upper- and lower-body power, lower-body strength, and aerobic endurance. The four events are: a standing long jump, seated power throw, strength deadlift, and interval aerobic run. Based on scores in these events, a recruit qualifies for one of four physical fitness levels: I) Heavy (black), II) Significant (gray), III) Moderate (gold), and IV) Unqualified (white).

We evaluated injury rates before and after the Army instituted the test and determined that injury and attrition rates increased slightly. Before OPAT, physical training injury rates averaged 15.8 percent and associated attrition rates averaged 10.4 percent; after OPAT implementation, physical training injury rates averaged 18.5 percent and attrition rates averaged 12 percent.

Additionally, while OPAT was designed as a gender-neutral tool, the Army's medical and training communities gathered data on gender-specific injury and attrition rates. Therefore, we included this perspective in our analysis as well. While rates increased

[1] HQDA EXORD 202-16 (Accessions Occupational Physical Assessment Test (OPAT) Implementation), 16 June 2016. This order was superseded and replaced by HQDA EXORD 071-17 (Accessions Occupational Physical Assessment Test (OPAT) Implementation), 9 December 2016. In addition, the order's Table of Physical Demand Categories for each MOS has been replaced by tables in the Smartbook for DA PAM 611-21 (Military Occupational Classification and Structure), 1 November 2018.

for both genders, we determined that female injury rates were almost twice those of their male counterparts and associated attrition was about 30 percent higher for female Soldiers.

Several factors hindered the Army's OPAT implementation from achieving the intended outcomes of reduced physical training injuries and injury-related attrition rates:

- OPAT assessment levels didn't significantly differentiate between increasing levels; on average, Soldiers exceeded the highest levels for each event.
- The Army didn't have a formal oversight process in place to effectively monitor and manage OPAT implementation and performance over time.

We also determined that injury and attrition codes either changed during OPAT implementation or were too vague. This made it difficult to establish a baseline and analyze comparative changes over time. As a result, the Army hasn't reduced the number of Soldiers who become injured and leave the Army before completing their initial contract, thereby reducing overall Army readiness.

While most Soldiers scored highly on the OPAT, injury and attrition rates haven't gone down. In fact, during CYs 17–19, almost 18,000 Soldiers at initial military training (IMT) and about 6,000 Soldiers at duty stations separated from the Army due to physical training-related issues. The Army spent about $77,800 to train each new Soldier at IMT during this timeframe. And, since there was no oversight body was in place to monitor and manage OPAT implementation, this lack of progress went unnoticed and no changes were made to the test during the scope of our review.[2]

Results and Recommendations

In this section, we discuss these three areas:

- Pre- versus post-OPAT implementation.
- OPAT assessment levels.
- OPAT oversight.

[2] Changes were made 1 October 2020 to increase the OPAT's difficulty (for example, the deadlift became a three-repetition event and, for the power throw, the recruit no longer has to place his or her back against a wall). However, these changes occurred outside the scope of our review, which ended in CY 19.

Pre- Versus Post-OPAT Implementation

We compared injury and attrition rates before OPAT implementation (CYs 14–16) to these rates after OPAT implementation (CYs 17–19), and they increased slightly after OPAT implementation. Almost 18,000 Soldiers at IMT and about 6,000 Soldiers at duty stations left the Army in CYs 17–19 due to physical training-related issues. It cost the Army about $77,800 to train each new Soldier at IMT during this period.

Although the Army designed OPAT as a gender-neutral tool, the medical and training communities continued to gather gender-based data; therefore, we included comparative analysis in our audit results.

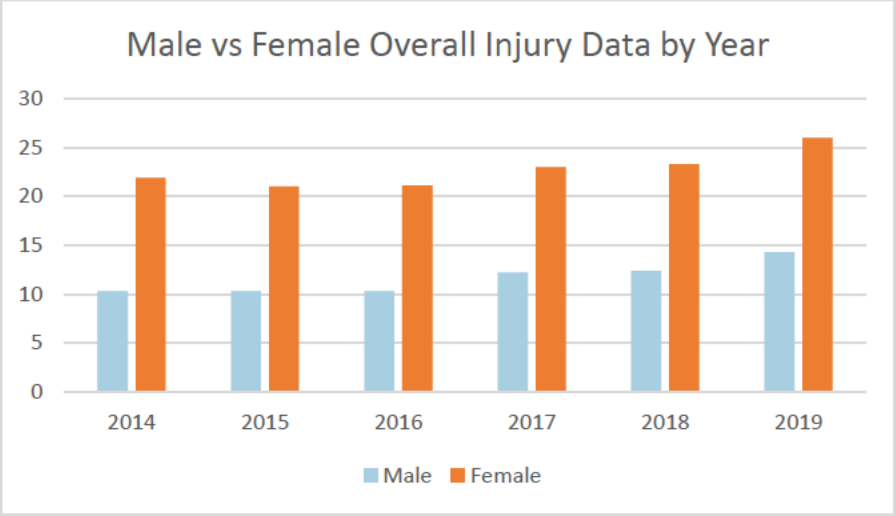
Injuries

OPAT didn't achieve its intended outcome of reducing physical training injury rates in accordance with HQDA EXORD 202-16.The EXORD states that OPAT is intended to improve readiness and accession quality by decreasing injuries. Two additional pieces of guidance (HQDA EXORD 071-17[3] and DA Pamphlet 611-21[4]) published after EXORD 202-16 also state that the purpose of OPAT is to increase readiness by reducing injuries.

The Army reported that the overall injury rate increased by about 3 percent from CY 14 to 19. Before OPAT implementation (CYs 14–16), the average physical training injury rate for basic training was 15.8 percent; after OPAT implementation (CYs 17–19), the rate increased to 18.5 percent.[5]

Although the Army designed OPAT to be a gender-neutral test, subject-matter experts reviewed and provided data by gender. Therefore, we did our analysis the same way and determined that males were injured at a lower average rate than females. The average injury rate for female recruits was nearly twice the average male injury rate, and this rate increased slightly after the Army implemented OPAT. Before OPAT implementation, the overall physical training injury rate for males was 10.3 percent versus 21 percent for females. After OPAT implementation, the average physical training injury rate for males was 13 percent versus 24.1 percent for females. Here are details:

[3] HQDA EXORD 071-17 (Accessions Occupational Physical Assessment Test (OPAT) Implementation), 9 December 16. This replaced HQDA EXORD 202-16.
[4] DA PAM 611-21 Smartbook (Military Occupational Classification and Instruction), [redacted]
(b) (6) [redacted]
[5] Injury data for advanced individual training wasn't recorded before OPAT implementation. Though injury data for one station unit training was recorded before OPAT implementation, this couldn't be compared to post-OPAT data.



Note: Details on our gender-related findings are in Annex D.

As shown, female injury rates were nearly twice that of male rates in each year, and rates rose from about 21.9 percent in 2014 to about 26 percent in 2019. Male injury rates rose from 10.3 percent to 14.3 percent during the same timeframe.

According to personnel from U.S. Army Medical Command (MEDCOM), the coding issues discussed above might explain the increase in total injuries reported. While MEDCOM personnel couldn't provide any supporting documentation to support this claim, they believe that the increased injury codes allowed the Army to record injuries more accurately as "physical training-related" than in prior years. They justified this assertion because injuries were stable across CYs 14–16 and only increased in CY 17 after the Army began using the expanded injury codes. Since CYs 17–19 injury rates remained stable at the increased rate, MEDCOM personnel believe that actual injury rates remained stable in CYs 14–19. As a result, OPAT didn't achieve its intended outcome of reducing physical training injury rates.

Attrition

OPAT didn't achieve intended outcomes for reducing attrition rates in accordance with HQDA EXORD 202-16. The EXORD states that OPAT is intended to improve readiness and accession quality by decreasing attrition. Additional guidance (DA Pamphlet 611-21) published after EXORD 202-16 continued to state that the purpose of OPAT was to increase readiness by reducing attrition.

Overall attrition rates hadn't gone down since the implementation of OPAT in CY 17. The Army reported that its overall attrition rate for CYs 14–19 increased by about 1.6 percent for physical fitness-related issues in first-term Soldiers (those who joined the Army during those years). Here are details:

Overall Attrition		
	CYs 14–16	CYs 17–19
Recruits	178,959	207,019
Separations	18,697	24,935
Attrition Percentage	10.4	12

We determined this rate by using data from six attrition codes that personnel from the Office of the Deputy Chief of Staff, G-1 agreed would be the best codes to determine fitness-related attrition. The codes were:

- Disability.
- Physical Condition, not Disability.
- Army Physical Fitness Test Failure.
- Weight Control.
- Unsatisfactory Performance.
- Entry Level Separation.[6]

To complete our attrition analysis the same way as our injury analysis, we also reviewed CYs 14–16 and CYs 17–19 data for first-term Soldiers by gender to determine if attrition rates were different for males and females after the implementation of OPAT. These numbers were consistent with our injury analysis. Here are details:

Attrition by Gender				
	CYs 14–16		CYs 17–19	
	Male	Female	Male	Female
Recruits	148,999	29,960	172,912	34,107
Separations	14,472	4,225	19,253	5,682
Attrition Percentage	9.7	14.1	11.1	16.7

Note: Details on our gender-related findings are in Annex D.

[6] While the generic codes "Unsatisfactory Performance" and "Entry Level Separation" may represent individuals who left the Army for a variety of reasons, we couldn't identify all the potential non-physical fitness causes of attrition due to coding issues. Thus, we examined CYs 17–19 Soldiers' records and determined how many of them were separated due to these codes and were also injured. Details on that review are in Annex D.

The overall rate of attrition for males and females rose from CYs 14–16 to CYs 17–19. Additionally, female attrition rates were about 30 percent higher than male attrition rates.

OPAT Assessment Levels

OPAT didn't differentiate significantly between individual Soldier fitness assessment levels. This table summarizes OPAT requirements by physical demand category and MOS:

OPAT Testing Requirements					
Physical Demand Category	Long Jump*	Power Throw*	Standing Deadlift	Interval Run in Shuttles	MOS Groups
Heavy (Black)	160 cm or 5'3"*	450 cm or 14'9"	160 lbs	43	Infantry, Field Artillery, Armor
Significant (Gray)	140 cm or 4'7"	400 cm or 13'1"	140 lbs	40	Human Resources, Military Police
Moderate (Gold)	120 cm or 3'11"	350 cm or 11'6"	120 lbs	36	Financial Managers, Logistics
Unqualified (White)	Any event score below Moderate (Gold) Level				

*Official standards are expressed in centimeters. We converted these to feet and inches for ease of reading.

OPAT Development

OPAT was intended to be a gender-neutral test to predict Soldier performance. Individual exercises were selected based on recommendations from an internal demands study of fully trained male combat arms Soldiers and female Soldiers from other MOSs. Exercises were chosen because they replicated typical Warrior tasks a Soldier would complete during a combat exercise (for example, the deadlift replicates assisting a Soldier from a vehicle turret). Soldiers then performed these exercises with a series of weights or for time/distance to determine ranges of performance.

The U.S. Army Research Institute of Environmental Medicine recommended that OPAT differentiate between Soldiers' fitness levels based on this demands study. The institute used established numbers from the study to develop the "Heavy" physical demand category. The numbers supported by the study were:

- 40 total shuttles.
- 450 cm for seated power throw.

- 160 cm for the long jump test.
- 160 pounds for the deadlift.

An approximate 10-percent drop in performance[7] from the Heavy category was used to create the "Significant" category and another 10-percent drop to create the "Moderate" category. For example, deadlift cutoffs were 160, 140, and 120 pounds, respectively. Other than the shuttle recommendation, all other recommendations were accepted by command. The original study that supported the test cutoffs recommended only 40 shuttles, but this didn't match existing IMT requirements, so it was set at 43 instead.

Soldier Scores

We obtained a sample of the entire population of Soldiers who took the OPAT from CYs 17–19 to determine average Soldier scores on OPAT. However, our sample had few females, so to make sure we accurately represented female OPAT scores, we also obtained a sample of both males and females. Thus, we analyzed both statistical samples (all newly recruited Soldiers since implementation of OPAT) of 68 males and 68 females from CYs 17–19. While reviewing individual scores for the three categories, we determined that the average score exceeded the highest cutoff for each test. Here are details broken down by gender:

Average OPAT Test Score by Gender					
	Average OPAT Score		Required Score	Difference	
Fitness Test	Male	Female		Male	Female
Deadlift	194	174	160	34 (21 percent)	14 (9 percent)
Power Throw	559	468	450	109 (24 percent)	18 (4 percent)
Long Jump	198	177	160	38 (24 percent)	17 (11 percent)
Shuttle	49	45	43	6 (14 percent)	2 (5 percent)

Note: Details on our gender-related findings are in Annex D.

Our analysis of the 68 male recruits also showed that most scored in the highest fitness level category:

- 52 (77 percent) scored in the Heavy category.
- 11 (16 percent) scored in the Significant category.

[7] Categories were developed using decreases of about 10 percent; however, the Research Institute of Environmental Medicine rounded up or down according to training requirements. For example, the deadlift uses a 20-pound drop instead of a 16-pound drop between categories.

- 5 (7 percent) scored in the Moderate category.

However, with respect to individual events that comprise the OPAT, 94 percent (64 of 68) of males scored in the Heavy category in 3 of the 4 events (deadlift, power throw, and long jump). Even during the shuttle run test (which has the lowest scores of all the tests for both males and females), 81 percent (55 of 68) of males qualified for the Heavy category.

For the 68 females, the 3 categories were more evenly distributed. Specifically:

- 23 (34 percent) scored in the Heavy category.
- 25 (37 percent) scored in the Significant category.
- 20 (29 percent) scored in the Moderate category.

The Army Public Health Center's Injury Prevention Program did a longitudinal study of Soldiers going through basic training and one station unit training[8] with similar findings. Males predominantly scored in the Heavy category (70 percent); female scores were more evenly divided among the three categories. As in our analysis, the Injury Prevention Program's study found that more than 90 percent of men scored in the Heavy category for 3 of the 4 tests (deadlift, power throw, and long jump).

OPAT was designed based on criteria to perform job duties; it wasn't designed to set standards of fitness. However, if most recruits score in the top category (Heavy) and injury and attrition rates don't go down, the original requirements should be reviewed to ensure they're accurately capturing the physical needs of a Soldier.

OPAT Oversight

The Army didn't have a formal process to effectively monitor and manage OPAT's impact over time. Quarterly reports on OPAT weren't prepared as required (per Fragmentary Order (FRAGO) 1[9] to EXORD 071-17). Instead, command relied on other sources for OPAT-related data, such as the longitudinal study previously mentioned. The quarterly reports weren't valuable because there was little data on IMT graduation, injury, or attrition.

[8] One station unit training is a program in which recruits remain with the same unit for both basic combat training and advanced individual training.
[9] FRAGO 1 to HQDA EXORD 071-17, 28 December 2016.

While there have been recent changes to OPAT,[10] more analysis is needed to determine if these changes have impacted injury and attrition rates. A formal annual review would be better to monitor the effectiveness of OPAT and to implement any needed changes.

Commander, U.S. Army Training and Doctrine Command

Recommendation 1: Conduct a formal evaluation of the OPAT physical fitness categories to determine if increasing the difficulty levels would better differentiate physical fitness abilities.

Command Comments: TRADOC concurred with the recommendation. The U.S. Army Center for Initial Military Training, in conjunction with the U.S. Army Public Health Center, will use existing OPAT data to determine the impact of changes to the standards for each OPAT test event for each physical demand category. This review will take place between 15 May 2021 and 1 July 2021. Recommendations will be presented to TRADOC senior leaders no later than 15 July 2021 for full implementation of any approved changes by 1 October 2021.

Recommendation 2: Establish a baseline of injury and attrition data, as well as a formal means to regularly gather and monitor OPAT data.

Command Comments: TRADOC concurred with the recommendation. The U.S. Army Center for Initial Military Training will request support from the Army Research Institute for Environmental Medicine and U.S. Army Public Health Center to establish an agreed formal method to gather OPAT data and an appropriate starting point to benchmark initial injury and attrition rates no later than 1 October 2021. At the end of each fiscal year starting 1 October 2021, the Center for Initial Military Training will review attrition/injury data and compare results to baseline rates established at the start point to determine if current policies result in sufficient, progressive changes in injuries and attrition and to document the review.

Official Army Position: The Office of the Deputy Chief of Staff, G-1 provided the official Army position and concurred with our findings, conclusion, and recommendations. The office also concurred with TRADOC's reply and planned actions.

Annex C contains the official Army position and verbatim command comments.

[10] Specifically, the deadlift has been changed to a three-repetition test. Also, for the seated power throw, recruits no longer must have their backs supported by a wall according to ATP 7-22.01 (Holistic Health and Fitness Testing), 1 October 2020.

Annex A: Supplemental Information

Scope and Methodology

We conducted the audit from February 2020 through February 2021 under Project A-2020-FIZ-0535. It was internally generated under the authority of The Auditor General. We conducted work at:

- HQDA.
  - Office of the Deputy Chief of Staff, G-1.
- TRADOC.
  - U.S. Army Human Resources Command.
  - U.S. Army Recruiting Command.
- Recruiting stations.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusion based on our audit objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusion based on our audit objective.

AR 11-2[11] requires all commanders and managers to establish and maintain effective internal controls. We evaluated the internal controls associated with the audit objective to determine whether they were effective or not.

This table summarizes the internal controls that we tested.

Internal Control Evaluation Matrix			
Internal Control Tested	Internal Control Component	Internal Control Principle	Related Recommendation Number (if applicable)
Were OPAT consent statements signed?	Control Activities	Design control activities to achieve objectives and respond to risks.	N/A

[11] AR 11-2 (Managers' Internal Control Program), 4 January 2010 [Rapid Action Revision, 26 March 2012].

Were OPAT scorecards signed?	Control Activities	Design control activities to achieve objectives and respond to risks.	N/A
Did recruiting centers designate personnel to review score cards and staff that validated scorecards and required signatures?	Monitoring	Establish and operate monitoring activities to monitor the internal control system and evaluate the results.	N/A
Was TRADOC reviewing quarterly reports on injury rates to determine the impact of OPAT?	Information and Communications	Use quality information to achieve the entity's objectives.	1 and 2
Were OPAT scores maintained in an Electronic Resource Management System such as the integrated Personnel Electronic Records Management System (iPERMS)?	Control Activities	Design the entity's information system and related control activities to achieve objectives and respond to risks.	N/A (discussed in Information Paper)
Were separation codes specific enough to address the root cause of attrition?	Monitoring	Establish and operate monitoring activities to monitor the internal control system and evaluate the results.	N/A

To determine if OPAT achieved its intended outcomes for reducing injuries and attrition rates, we:

- Obtained and analyzed overall Army data for both injuries (from Army Public Health reports) and attrition (from data provided by Office of the Deputy Chief of Staff, G-1) for CYs 14–19.
- Used the injury code for musculoskeletal injuries to identify Soldiers who were injured. We used data on basic training to review the injury data because no data was available for advanced individual training, and data was limited for one station unit training.
- Identified Soldiers who separated from the Army because of injuries based on each Soldier's attrition reason. We selected all codes for "Unsatisfactory Performance" and "Entry Level Separation" because we couldn't determine if there was a coinciding injury for those individuals. Here are the six attrition reasons we used to identify Soldiers who separated from the Army due to injury:
  - Disability.
  - Physical Condition, not Disability.

- Army Physical Fitness Test Failure.
- Weight Control.
- Unsatisfactory Performance.
- Entry Level Separation

Used HQDA G-1's reported fixed-cost estimates for training female and male Soldiers at basic, advanced individual training, and one station unit training. We used these estimates to project the costs associated with Soldiers who were separated from the Army due to physical fitness-related issues. Based on an achieved sampling precision of 4 percent, these are the projection of fixed costs for the entire population of female and males Soldiers who separated from the Army due to physical training injuries during CYs 17-19.

Projected Costs of Separation Due to Injury		
	Male	Female
Low-point projection	$154,354,475	$40,881,731
Mid-point projection	1,066,296,704	328,955,418
High-point projection	2,146,126,026	617,029,105

To determine our gender-related findings, we analyzed two statistical samples that were based on the population of Soldiers recruited since OPAT was implemented. Specifically:

- We selected a separate statistical sample of 68 males and 68 females; both samples were based on the population of all future Soldiers who completed basic, advanced individual training, and duty training 1 January 2017 through 31 December 2019. We used the following parameters to select our two samples: a confidence interval of 90 percent, an expected occurrence rate of 50 percent, and a sample precision of 10 percent.
- For our separate male and female samples, we determined how many were placed in each of the three OPAT categories (Heavy, Significant, and Moderate)
- The Army Forces Health Surveillance Branch provided us with musculoskeletal injury data. The data was for first-term Soldiers during CYs 17–19, and it was from the Defense Medical Surveillance System. We analyzed this data to identify injury trends in our two statistical samples.

- For all the sampled Soldiers, we:
    - Compared and analyzed our statistical sample data with injury data to determine how many Soldiers were injured.
    - Compared injuries by gender.
    - Determined when our sample data injuries occurred (during basic training or advanced individual training, or at permanent duty stations).
    - Compared and analyzed our overall OPAT sample data with attrition data to determine how many Soldiers were separated.
    - Compared attrition by gender.
    - Determined when our sample data attrition occurred (during basic training or advanced individual training, or at permanent duty stations).
    - Compared and analyzed our sample data with attrition data to determine if Soldiers who were injured also were separated from the Army.

We relied on reports that personnel from the Armed Forces Health Surveillance Branch provided in Excel format. We didn't perform system control reviews; instead, we performed data reliability assessments on the data used to support our findings and conclusion. While we annotated several issues in the data, we concluded the data was sufficiently reliable to support our conclusion and findings. The specific data we used was CYs 17–19 musculoskeletal injuries coded as "ICQ-10" for first-term Soldiers. These are the tests we performed:

- Verified that ICQ-10 codes related to musculoskeletal injuries.
- Verified that the data ranged from CYs 17–19.
- Confirmed that there was no duplicate data.
- Matched the size of the data we received to the size of the data sent to us.
- Verified that we received the number of records that was sent to us.
- Verified that fields included all the specific types of data we required.
- Confirmed that there were no gaps in the data.

To conduct our analysis, we worked with Army subject-matter experts in injury and attrition. Initially, they had concerns with our methodology because there were coding

issues for both injury and attrition. Specifically, the number of injury codes increased from about 2,000 to more than 40,000, vastly increasing the ability to capture specific injuries and making direct comparisons over time challenging. The Army also used generic attrition codes, such as "entry level separation," to explain why Soldiers left the Army. This made causal analysis on attrition rates difficult.

However, we believe our results are accurate and reliable because we worked with the appropriate subject-matter experts to understand the data and to crosswalk available older data. We thoroughly analyzed overall Army data, gender-related data, and our sample data. Through this detailed analysis, we determined that injuries and attrition weren't reduced by implementing OPAT.

Report Distribution

We're sending copies of this report to the:

Deputy Chief of Staff, G-1
Deputy Chief of Staff, G-3/5/7
Commander, U.S. Army Training and Doctrine Command
Commander, U.S. Army Medical Command
Commander, U.S. Army Human Resources Command
Commander, U.S. Army Recruiting Command

We'll also make copies available to others upon request.

Annex B: Background

Responsibilities

The Deputy Chief of Staff, G-1 coordinates with TRADOC to update all applicable regulations to reflect the OPAT as an entry requirement.

The Deputy Chief of Staff, G-3/5/7 coordinates with the Deputy Chief of Staff, G-1 and TRADOC to update all applicable regulations to reflect OPAT as an entry/reclassification requirement.

TRADOC is responsible for administering OPAT to all Army applicants. The command also established the process and timing of giving the OPAT to all Soldiers.

MEDCOM supports TRADOC in evaluating OPAT implementation. The command is identifying requirements for a comprehensive database to track injury rates and other medical data.

U.S. Army Human Resources Command is the official records custodian for the Active Component and the authoritative source for filing records and documentation into the interactive Personnel Electronic Records Management System (iPERMS).

U.S. Army Installation Management Command is responsible for providing a fitness center at each installation to support OPAT testing.

U.S. Army Military Entrance Processing Command evaluates applicants' qualifications for enlistment to provide fully qualified and motivated recruits. Guidance counselors at military entrance processing centers verify Soldiers' OPAT scores and assigned MOSs for accuracy.

Guidance

HQDA EXORD 202-16 is the primary authority that defines OPAT. It identifies the purpose of OPAT (decreasing injury rates and attrition) and requires each Soldier to achieve a qualifying OPAT score for his or her assigned MOS before reporting to advanced individual training or one station unit training.

HQDA EXORD 071-17 rescinded and replaced HQDA EXORD 202-16 and provides detailed implementation guidance. FRAGO 1 to HQDA EXORD 071-17 adds additional reporting requirements for OPAT.

USARIEM Technical Report T16-2[12] explains why and how OPAT was developed. Before 2016, the Army Physical Fitness Test was the only way to assess a Soldier's physical readiness; however, studies showed that the fitness test score didn't highly correlate with performance on physically demanding tasks. Therefore, the Army developed a new test—OPAT—to assess potential Soldiers' fitness levels before entering an MOS.

[12] USARIEM Technical Report T16-2 (Development of the OPAT), October 2015.

Annex C: Official Army Position and Verbatim Comments by Command

DEPARTMENT OF THE ARMY
OFFICE OF THE DEPUTY CHIEF OF STAFF G-1
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WASHINGTON DC 20310-0300

DAPE-MPE

21 MAY 2021

MEMORANDUM FOR U.S. Army Audit Agency (Office of the Deputy Auditor General Forces and Infrastructure Audits), 6000 6th Street, Building 1464, Ft Belvoir, VA 22060

SUBJECT: Official Army Response to the Draft Report on Implementing the Occupational Physical Assessment Test (Project A-2020-FIZ-0535)

1. DAPE-MPE concurs with auditor's observations, findings, conclusions, and recommendations 1 & 2. Additionally, we concur with the response provided by the U.S. Army Training and Doctrine Command (TRADOC).

2. There are no changes or additional comments to those submitted by TRADOC.

3. Point of contact for this action is (b) (6)
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JASON T. EDWARDS
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DEPARTMENT OF THE ARMY
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REPLY TO
ATTENTION OF

ATMT-OP 10 MAY 2021

MEMORANDUM FOR U.S. Army Audit Agency (USAAA), Office of the Deputy Auditor General, Forces and Infrastructure Audits, 6000 6th Street, Building 1464, Fort Belvoir, VA 22060-5609

SUBJECT: Command Reply to USAAA Draft Report on Implementing the Occupational Physical Assessment Test (Project A-2020-FIZ-0535.000)

1. HQ TRADOC's reply to the subject draft report is enclosed. We concur with comments for Recommendation 1, as addressed to Commander, TRADOC. We concur with comments for Recommendation 2, as addressed to Commander, TRADOC.

2. Point of contact is (b) (6)
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(b) (6)

Encl

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Response to Draft Audit Report Recommendations

Draft Report, Implementing the Occupational Physical Assessment Test (Project A-2020-FIZ-0535.000)

Recommendation 1: Conduct a formal evaluation of the OPAT physical fitness categories to determine if increasing the difficulty levels would better differentiate physical fitness abilities.

TRADOC Response: Concur with comments.

Comments for Consideration:
U.S. Army Training and Doctrine Command (TRADOC) concurs with the findings in the U.S. Army Audit Agency (USAAA) report pertaining to the Occupational Physical Assessment Test (OPAT). The following comments support those findings.

1. Estimates place the Army attrition costs related to musculoskeletal injuries (MSKI) at exceeding $1.4 Billion due to unprogrammed injuries. This cost is a key finding to highlight to senior leaders. The Army attrition challenge at Initial Entry Training (IET) is centered on MSKIs. Providing assets to reduce MSKIs will save the Army significant expenses in recruiting, retention and treatment. Pre-Ship training and early intervention at IET should be the primary focus point.
2. The OPAT is predictive of on-time graduation; the higher your OPAT score, the more likely you are to graduate on-time. According to data provided by the U.S. Army Public Health Center (USAPHC), approximately 50% of all "recycled" Trainees fail to ever graduate from IET.
3. Some Trainees report the OPAT is not being administered to standard, not administered at all or was so unremarkable / undervalued they don't remember taking the test.
4. Initial OPAT standards (CY17) were intended to move the OPAT from initial operational capability to full operational capability. These "cut scores" were never intended to be enduring standards, but rather a start point to be later adjusted.

CIMT Summary Conclusions:

1. Providing additional resources to better physically prepare recruits for the rigors of training could save as much as $1 billion annually.
2. The OPAT's lack of rigor failed to produce the conditions necessary to extrinsically motivate recruits to engage in increased adaptive physical activities IOT to improve training outcomes.
3. Some Recruiters failed to systematically administer the OPAT to standard.
4. The onset of COVID was a confounding factor current OPAT administration.
5. The change from international classification of diseases (ICD) 9 to ICD 10 codes was a confounding factor in the review.

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Recommendation 1 Action Plan: The U.S. Army Center for Initial Military Training (USACIMT), in conjunction with the USAPHC, will use existing longitudinal OPAT data for on-time graduation, injury and attrition to determine the impact of changes to the criterion test standards for each OPAT test event for each Physical Demand Category (PDC). The primary metric will be on-time graduation rates, used as a surrogate for attrition and injury. This review will take place between 15 MAY 2021 and 1 JUL 2021. Recommendations will be presented to TRADOC senior leaders NLT 15 JUL 2021 for full implementation of any approved changes on 1 OCT 2021 (FY22). We will keep USAAA appropriately informed relative to any policy changes associated with the Recommendation 1 action plan and subsequent changes to OPAT's efficacy to reduce injuries and attrition and improve on-time graduation.

Recommendation 2: Establish a baseline of injury and attrition data, as well as a formal means to regularly gather and monitor OPAT data.

TRADOC Response: Concur with comments

Comments for Consideration:
TRADOC concurs with the findings in the USAAA report pertaining to the need to formally gather and monitor OPAT data. The following comments support those findings.

1. The resources most critical to supporting this data collection are not under direct TRADOC control.
2. Aligning institutions that directly support research and data collection for individual Soldier military performance, such as the United States Army Research Institute for Environmental Medicine (USARIEM) and the Epidemiology Division of the Army Public Health Center, under direct TRADOC Command and Control would better align the assets with the mission requirements. Support to TRADOC should be included in their core funding and requirements.

Recommendation 2 Action Plan: USACIMT will request support from USARIEM and USAPHC to establish an agreed formal method for gathering OPAT data and an appropriate starting point to benchmark initial injury and attrition rates NLT 1 OCT 2021. This start point will be used as the baseline to determine changes in injury/attrition rates. Absent increased resource or realignments, TRADOC will continue to rely on the USAPHC and HQDA G-1 for injury and attrition data.

At the end of each fiscal year starting 1 OCT 2021, USACIMT will review the attrition/injury data and compare these results to the baseline rates established at the start point to determine if current policies result in sufficient, progressive changes in

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injuries and attrition and to document the review. We contend an annual review would be more beneficial to better identify longitudinal trends. This review will be conducted in collaboration with key players to include USARIEM, USAPHC, and HQDA G-1.

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Annex D: Gender-Related Findings

To answer our audit objective, we analyzed how implementing OPAT affected injury and attrition rates. We obtained a sample for the entire population of data for CYs 17–19. However, our initial population sample had few females in the data so to ensure we accurately represented female injuries and separation, we obtained a sample of both males and females. We analyzed two statistical samples (Soldiers recruited since implementing OPAT) of 68 males and 68 females from CYs 17–19.

The following is a full breakdown of our analysis by gender.

- Injury and attrition rates for males (42 and 44 percent respectively) were lower than females (58 and 56 percent, respectively).
- Most injuries (63 percent) and attrition (72 percent) due to physical fitness issues occurred during IMT before a Soldier reached his or her permanent duty station.

Almost half of Soldiers with physical fitness-related injuries (43 percent) are likely to be separated from the Army.

Taking this into account, we performed two statistical samples for CYs 17–19 (one for males and one for females) and found a similar trend to what MEDCOM reported for its data. Of our two statistical samples:

- Injury rates didn't show any trends in reduction across years.
- Males were injured less often than females (24 versus 33 injuries).
    - 26 percent (18 of 68) males and 35 percent (24 of 68) females were injured.
    - 33 percent (6 of 18) males and 38 percent (9 of 24) females had additional injuries that carried over from year to year.
- All Soldiers (males and females) were injured more often during IMT than at their duty station. Of the 57 injuries:
    - 36 total injuries occurred during IMT.
    - 21 total injures occurred at the permanent duty station.

This overall trend also extended into our attrition analysis as injuries and attrition data tend to stay constant across years.

Male Injuries

Eighteen males were injured in our sample. However, 6 of these Soldiers had additional injuries that carried over from year to year for a total of 24 injuries throughout the period of our review.

Male Injuries by Year				
	CY 17	CY 18	CY 19	Total
Injured only in current year	5	4	9	18
Also injured in prior year		4	2	6
Total	5	8	11	24

In addition, males were injured more often during IMT than at the permanent duty station (14 versus 10 injuries).

Male Injuries by Location and Year				
	CY 17	CY 18	CY 19	Total
Injured during IMT	3	5	6	14
Injured at duty station	2	3	5	10
Total	5	8	11	24

Female Injuries

Twenty-four females were injured in our sample. However, 9 of these Soldiers had additional injuries that carried over from year to year for a total of 33 injuries throughout the period of our review.

Female Injuries by Year				
	CY 17	CY 18	CY 19	Total
Injured only in current year	8	7	9	24
Also injured in prior year		4	5	9
Total	8	11	14	33

In addition, females were injured more often during IMT than at the duty station (22 versus 11 injuries).

Just like our initial review and our injury review, we found:

- Attrition rates didn't tend to decline across years. While there was one year that had a large number of women who were separated (CY 18), the next year went back to the same level as the prior year. Male attrition was lower than female attrition (8 versus 10 separated Soldiers).

- All Soldiers (male and female) separated more often during IMT (72 percent) than at duty station (28 percent) from fitness-related injuries.

In addition to these issues, 43 percent of the Soldiers who were in our injury review also were separated from the Army with a physical fitness-related injury.

Here is our CY 17–19 analysis between our statistical sample of males and females:

Male Attrition

Eight of 68 male Soldiers were separated from the Army in CYs 17–19 due to physical fitness-related injuries. Specifically two Soldiers in CY 17, two in CY 18, and four in CY 19.

Six (75 percent) of these 8 Soldiers were separated during IMT (basic and advanced individual training). This implies that they didn't meet fitness levels required for training purposes. Here are details:

Male Attrition				
Reason for Attrition	Location of Attrition			
	Basic	AIT	Duty Station	Total
Entry-level performance and conduct		1		1
Failed medical/physical standards	5			5
Disability, severance pay, non-combat related			1	1
Physical standards			1	1
Total	5	1	2	8

AIT: Advanced individual training.

Of these, 3 of 8 (38 percent) were also part of our injury data analysis.

Female Attrition

Ten of 68 female Soldiers were separated from the Army in CYs 17–19. Specifically, one Soldier in CY 17, eight in CY 18, and one in CY 19.

Seven (70 percent) of these 10 Soldiers separated during IMT. This implies that they didn't meet fitness levels required for training purposes. Here are details:

Female Attrition				
Reason for Attrition	Location of Attrition			
	Basic	AIT	Duty Station	Total
Entry-level performance and conduct			1	1
Failed medical/physical standards	3	2	1	6
Disability, severance pay, non-combat related			1	1
Physical standards		2		2
Total	3	4	3	10

AIT: Advanced individual training.

Of the 10 females who were separated, 5 (50 percent) were also part of our injury data analysis.

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