Test Security: Before, During, and After Exam Administrations

Question: *Given the general standards/requirements of implementing exam security, how can a regulatory agency incorporate specific policies and procedures to ensure quality exam security?*

Answer: Testing personnel in regulatory agencies need to be aware of the importance of safeguarding the confidential nature of the examination materials not just during the exam administration, but in the development and post-exam phases as well. Below are specific policies and procedures for implementing exam security before, during, and after exam administrations.

I. BEFORE

Question*: What policies and procedures are needed for exam security pre exam administration?*

Answer: Regulatory agencies can incorporate best practices in exam security in four critical areas: 1) exam construction and Internet security; 2) training of testing staff; 3) test site/facility operations; and 4) candidate responsibilities.

1. Exam Construction and Internet Security: Security begins with exam design and development by having a secure and closely monitored item bank and tracking examination forms from early draft versions to final format, and accounting for/documenting delivery/receipt of drafts of every examination, whether delivered electronically or in paper booklet format. Access to secure material should be controlled and limited with authorized reviewers required to sign confidentiality statements when presented with examination text. Creation of a significant number of new test questions each year helps prevent item overexposure. New test items reduce the risk of memorization and cheating. To minimize the risk of using previously administered test content to which candidates may have access online, testing development staff can search the Internet for test content. Some agencies use sophisticated proprietary content rotation and delivery design to reduce the possibility of any predictability that could influence a score.

2) Training of testing staff: site managers, chief examiners (CE's), supervisors, proctors/invigilators: Thorough training of all testing staff to prepare for managing test administrations may include a requirement for staff to pass an exam to demonstrate knowledge of test delivery policy, practices and procedures before they can serve as a Test Site Manager/CE. All staff including Proctors/invigilators must follow the regulatory agency's most current procedure manual, which should be updated and customized for the exam being administered. Topics in the manual topics include the specific policies listed in Section II of this FAQ titled "During the Exam." Testing personnel must be ever mindful of the importance of safeguarding the confidential nature of examination materials before the test administration by locking examinations in a secured location (with limited access) when not in use. Except in the case of a defective booklet, testing personnel should not be permitted to view exam contents; content in computer based exams (CBT) and paper & pencil (P&P) exams should be seen only of the candidate. Paper copies of exam booklets should be sealed and opened only by the candidate.

3) Test site or facility operations including protocols and standards: Whether administering exams via CBT or P&P, each test site or facility needs to provide verifiable references and be pre-qualified according to rigorous security standards. Hotel locations, educational institutions, and other facilities require pre-administration site visits by CE's to determine the most effective security arrangements (seating, space between candidates, capacity) in that location.

CBT: Internet security protocols should be similar to those used by major financial institutions for their secure transmissions. The communication channel should use state-of-the-art encryption, and software should be able to detect whether a transmission was altered or disrupted. Internet delivery should ensure that test content can only be accessed during the actual test administration. Sophisticated software monitoring can be installed to automatically: close all non-test specific windows or applications, including instant messaging (IM); close and log any incidents of applications attempting to open during the test; and lock the desktop, suppressing key combinations so the test taker cannot switch to any other task.

P&P: Shipping paper exams can be controlled with sequential numbering and shrink-wrapping of books; automated e-mails to shipper with tracking numbers; tracking of all shipments and identification shipping delays; and verification by CE of receipt of all materials.

4) Candidate Awareness of Responsibilities: Candidate guides, information bulletins, and instructions to candidates prior to exam administration should inform candidates of security policy and candidate responsibilities including exam confidentiality, prohibition of exchanging information with other candidates while the examination is in progress, and notification that electronic devices (cell phones, PDAs, smart phones, etc.) will not be allowed into the test center. Also, instructions for reporting any testing irregularities, unusual behavior or suspicions of cheating should be provided to candidates before the exam.

II. DURING

Question: *What is needed for exam security during exam administration?*

Answer: The most critical element in security at the test site, whether CBT or P&P, is trained testing staff who follow current procedures and policies and take appropriate action regarding nine elements of exam administration: 1) candidate identification; 2) check-in process; 3) access to exams; 4) candidate belongings/materials; 5) testing center/room protocol; 6) monitoring and irregularities; 7) suspected cheating; 8) irregularities noted by candidates; and 9) site observers/auditors. Regulatory agencies should be aware of advances in technology available to enhance exam security on the day of the exam such as wanding, mobile phone scrambling and other techniques.

1) Candidate Identification requirements: Adhering to strict ID requirements, appropriate for each country, includes vigilant comparison of government photo ID with rosters to verify name matching and signatures. Regulatory agencies should determine if new technologies in identification would be appropriate to use. Some agencies collect samples of handwriting and signatures, and take photographs at test centers. Candidate signatures on the rosters need to be required for admittance to the testing room.

2) Check-in process: Test takers are prohibited from bringing items into the testing room that could be used as a testing aid or to collect, share or collaborate on test content. This means not having access to personal items such as books, references, cell phones, electronic devices, handbags and backpacks, all of which are stored separately from the test takers to maintain security. Check-in includes storing the aforementioned personal property and may also include removing watches, jewelry, hats, turning out pockets, and having proctor/invigilators inspect permitted equipment such as calculators, or equipment used in special accommodations. Admission tickets/letters need to be inspected for the presence of notes. When seated, the candidate must display his/her photograph and show ID when leaving or entering the testing room. After all candidates are checked in, the CE should review the exam roster to document candidates that are present and any "No Show" candidates.

3) Access to exams: Only verified admitted candidates, and not testing personnel, should view the contents of exams. Testing personnel must safeguard the confidential paper examination materials during the test administration by keeping unused examinations secure and not available to candidates. Candidates should not have access to any examination booklets other than their own during administration. If there are extra examination booklets, they should be kept in the box in which they were shipped and inaccessible to candidates. In P&P exams, candidates should have only one examination booklet and one answer sheet at any time; defective booklets and answer sheets should be replaced immediately and reported as an irregularity. Note taking during the examination should be restricted to scratch work completed in the examination booklet or on blank paper provided at the testing center. Candidate notes must be collected by the proctor/invigilator and cannot be removed from the testing room by the candidate. Neither testing staff nor candidates should be allowed to duplicate or retain any portion of the examination materials.

4) Candidate belongings and materials: At the candidate's testing space, candidates should only have photo ID, admission ticket, and pencil(s). For more information on prohibited belongings, Caveon and

Prometric have detailed descriptions of various ways that belongings can be used to copy exam materials or cheat via access to concealed notes with hidden cameras, hats, hoodies, skirts, jewelry, buttons, pens, shoes, bottle labels, eraser or pencil wrappers. Candidates should not be allowed to bring in paper of any kind, including note pads, scratch paper, etc. Cell phones should be strictly prohibited whether in or out of the testing room; some agencies remove candidates immediately from the exam and void the exam if candidates are found with a cell phone in their possession during the examination administration.

5) Test site/testing room protocol: Only testing personnel, registered candidates, and on-site observer/auditors should be permitted in the testing room. Candidate access to breaks, water and food/snacks, and test site layout, locations of restrooms, and vending machines, and protocol for their use should be made clear to candidates before the exam begins. Candidates who wish to leave the testing room during the testing session must leave their examination materials and ID with the proctor/invigilator/CE before being excused from the testing room. Candidates should not be allowed access to stored belongings during breaks.

6) Monitoring and irregularities: The Test Site Administrator or CE is responsible for ensuring uniform and prescribed testing conditions for all candidates that minimize the likelihood of cheating. The exam must be staffed with the appropriate candidate proctor/invigilator/ratio and testing staff must be present and watchful throughout the entire examination. The CE supervises proctor/invigilators and corroborates and reports suspicious behaviors. In P&P exams, the CE keeps inventory during the examination period, counting the number of candidates, number of examination booklets distributed, and number of unused booklets, ensuring the total number of used and unused examination booklets totals the number of booklets shipped. The CE should record the sequence numbers of ALL unused examination booklets forms in a formal log. Proctor/Invigilators should monitor candidate behavior during the exam by walking around, and should have a standard response to candidate questions about exam content: "I'm sorry, I cannot help you with that; read the question carefully and perhaps you will see what is meant." If there is an issue with a specific question, error on the exam, or defective booklet the Proctor/Invigilator documents it on the irregularity report. Proctor/Invigilators should warn candidates immediately to refrain from speaking to other candidates if they are doing so and if the behavior persists, one of the candidates should be moved to another seat and the names and identification numbers of the candidates involved should be reported as an irregularity.

7) Suspected Cheating: If testing staff suspects a candidate is copying from another candidate, collusion among candidates, or a candidate is using unauthorized materials, another member of testing staff must immediately be informed to corroborate the suspicion. One member of the testing personnel should stand near the candidate for closer observation and if the candidate's behavior persists, the Proctor/Invigilator should report the name and identification number of the suspected candidate as well as the name and identification number of the candidate from whom he/she is copying (whether or not there appears to be collusion), the time and duration of the event, and any other pertinent descriptive behaviors. After these data are recorded, the candidate should immediately be moved to a new seat, and any unauthorized materials confiscated and documented. Any odd or unusual behavior observed during the examination administration (both in and out of the testing room), should be brought to the attention of the CE immediately. All suspected incidents of candidate cheating must be recorded with a full report and the regulatory agency informed on the day of the exam.

8) Irregularities noted by candidate: Test takers should be able to speak with a member of the testing staff during the administration regarding testing irregularity, unusual behavior or cheating. Candidate comments should be recorded on an irregularity report. Proctors/Invigilators should investigate per the procedures outlined in monitoring and cheating above.

9) Site observers/auditors: Site observers/auditors authorized by the regulatory agency may make announced or unannounced visits to test sites to observe and ensure that the highest security standards are being applied and maintained in testing environments. The on-site observer must provide identification (i.e., photo identification). An on-site observer should have a standard checklist to record/document how procedures are being followed, but should not be intrusive and disturb candidates.

AFTER

Question: *What policies and procedures are needed for exam security post exam administration?*

Answer: For P&P exams four procedures are critical: 1) collecting exams; 2) candidate dismissal; 3) accounting and inventory; and 4) return shipping and receiving. For both CBT and P&P a fifth policy is essential: 5) follow-up controls & reporting.

1) Collecting exams: The exact time the examination concludes should be recorded and candidates should immediately stop working; if anyone continues after time has expired, they must be stopped and an irregularity should be reported. Collection of P&P exams should not be rushed and candidates should remain seated while Proctors/Invigilators collect all examination materials and document on the roster that all examination materials have been verified that the candidate's examination materials have been returned. Only then can the candidate be permitted to leave the testing room. To prevent candidates who are dismissed from removing examination materials from a test site without being observed, it is important during the collection process that unused and/or collected examination materials are monitored at all times and not left on a Proctor/Invigilator's table unattended. Examination booklets and answer sheets are counted after the administration and before candidates leave the test site, to verify that all examination materials have been returned. Testing staff should check all books to ensure no answer sheets remain in the book.

2) Candidate dismissal: Candidates who become ill and need to leave the exam early must turn in all exam materials and the early departure should be recorded in an irregularity report. Candidates who complete the exam before time is called should be instructed to raise their hand when they are finished and the Proctor/Invigilator will collect the examination booklets and answer sheets. For all candidates, the Proctor/Invigilator verifies that all required information has been written on the answer sheets (i.e., name, ID number, test code, test site, examination date) before dismissing the candidate. Once the exam is officially ended, candidates are not allowed to leave the testing room until they hand in their examination booklets and answer sheets, and any notes (CBT) to the Proctor/Invigilator. Candidates who have been dismissed should be instructed to leave and not to congregate outside the doors of the testing room(s). At test sites where more than 20 candidates are still in the testing room when the testing session has ended, Proctor/Invigilators should dismiss candidates by section (i.e., by rows or sections of the room) to avoid confusion at the exit area. Candidates, who have not been dismissed, as well as candidates who are still waiting in the exit line, must be monitored to ensure that they are not still working on the examination after the testing session has ended. Candidates may leave the testing room only after all the examination materials have been verified and collected by the Proctor/invigilator assigned to that area.

3) Accounting and inventory: For P&P exams, an O*n-Site Examination Booklet Log* and *Answer Sheet Inventory Log* will provide essential records of the exam booklet and answer sheet inventory. The total number of used and unused examination booklets should total the number of booklets shipped and the sequence numbers of all unused examination booklets should be recorded on the *Booklet Log*. At the end of the examination, for their assigned area, Proctor/Invigilators must record the number of booklets used, verify the sequence number of all unused examination booklets, sign the form, and return the form to the CE. The CE verifies that number of examination booklets distributed at the beginning of the exam equals the number of examination booklets returned to the CE. Defective booklets are included in this count. Once all the examination booklets have been collected and counted by two testing staff, and there is one completed answer sheet for each candidate who registered for the examination, the CE signs the inventory logs which are returned with the shipment. Return labels should be provided in the original shipment and all testing materials should be returned via Federal Express or DHL no later than 48 hours after the conclusion of the exam.

4) Return shipping and receiving: Return shipments should be tracked to identify shipping delays and expected arrival. All return shipments must be logged upon receipt and compared to the original order to identify any missing books. The number of examination booklets originally sent must total the number of booklets returned. Actual answer sheets should be matched with the Proctor/Invigilator's inventory sheet to ensure all answer sheets are received. "Quarantine" procedures should be used immediately to help locate a missing book or answer sheet.

5) Follow-up controls & reporting: Regulatory agencies should provide a number of options for reporting/contacting the agency as soon as possible after the exam regarding testing irregularities, unusual behavior, or suspicions of cheating. A staff team at the agency should be assigned to investigate

and resolve reported issues. Those reporting should be assured that all information will remain confidential. Whenever possible, the investigation should begin before scores are released. Some agencies have policy and procedures in place for security reviews when there is suspicion that scores are not valid including photograph review, handwriting analysis and score analysis. Scores can also be monitored through software that can detect significant changes in scores for repeat test takers. Irregularity reports should be reviewed after each administration to identify any deficiencies at the sites that need to be addressed. Sites should be selected for auditing on a random basis. It is recommended to conduct more frequent random inspection of test centers as well as site visits to centers where concerns have been raised through supervisor reports, tips or test-taker complaints. If it is determined that a test center or site does not meet security standards and it fails to correct the issue, it should not be reused.