Q&A column

Editor: Frederick L. Kiechle, MD, PhD

Submit your pathology-related question for reply by appropriate medical consultants. CAP TODAY will make every effort to answer all relevant questions. However, those questions that are not of general interest may not receive a reply. For your question to be considered, you must include your name and address; this information will be omitted if your question is published in CAP TODAY.

Q. How many blocks should a histotechnologist with multiple responsibilities cut per day in a semiautomated laboratory?

A.October 2022—The average number of blocks cut by histotechs per day is about 26 (6,433 blocks per full-time equivalent staff per year), according to a study jointly published by the National Society for Histotechnology and CAP in 2011.[1] However, this study also reported that histotechs spend only about 25 percent of their time at the microtome.

In a U.S. study based on a 2010 survey by the American Society for Clinical Pathology and Association of Directors of Anatomic and Surgical Pathology, the calculated number of blocks cut per FTE per hour was 23 (range, 5–70).[2] The latter study is perhaps more robust, as the NSH-CAP study did not include blocks cut for special procedures. Productivity numbers are slightly lower in laboratories processing fewer than 20,000 cases a year, in part because those labs are often less automated and the histotechs perform a greater variety of tasks.

A workload study by the National Society for Histotechnology, published in 2020, did not analyze blocks per histotech but reported that hospitals cut more blocks per hour (51.2) than did independent private laboratories (40.9).[3]

The total number of blocks cut will depend on a number of variables, including the size of the laboratory, level of automation in the laboratory, and histotechs' overall responsibilities.

1. Kohl SK, Lewis SE, Tunnicliffe J, et al. The College of American Pathologists and National Society for Histotechnology workload study. *Arch Pathol Lab Med*. 2011;135(6):728–736.
2. Buesa RJ. Productivity standards for histology laboratories. *Ann Diagn Pathol*. 2010;14(2):107–124.
3. Dwyer K, Siena D, Wanner AMJ, Wildeman CI. National Society for Histotechnology workload study. *J Histotechnol*. 2020;43(1):38–46.

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To readers: For further clarification of this answer, see "How many blocks," (Q&A column, December 2022).

Q. Is it acceptable to release results from an analyzer with flags or alarms if a pathologist sends an email instructing to do so, even if the manufacturer's instructions state that results with flags or alarms should be verified by another method before reporting? I am referring to hematology analyzer auto-differential results with asterisk flags. The emailed instructions from the pathologist are applied to all samples but are not incorporated into our standard operating procedure.

We report auto-differential results that have asterisk flags and then perform a manual differential. The report, therefore, contains two differential results that, when compared, are almost always different clinically and statistically.

A.It generally is not acceptable to release results from a hematology analyzer with flags or alarms if doing so contradicts the manufacturer's instructions. Instrument flags are in place to prevent inaccurate results from being reported and allow laboratorians to detect cell types (such as blasts) that are not part of the standard automated differential. If a numeric flagged result is released before being confirmed by another method (usually a manual differential), it could lead to conflicting results in the medical record.

Going against a manufacturer's instructions necessitates that the FDA-approved test be reclassified as a laboratory-developed test. LDTs require extensive additional validation before being used for patient testing.[1] Because a purpose of instrument flags is to prevent errors, such validation is not advisable and may not be possible.

If turnaround time is a concern, the pathologist should consider reporting only the valid parts of the automated test as a preliminary result and following up with a manual differential.

1. Graden KC, Bennett SA, Delaney SR, Gill HE, Willrich MAV. A high-level overview of the regulations surrounding a clinical laboratory and upcoming regulatory challenges for laboratory developed tests. *Lab Med*. 2021;52(4):315–328.

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Q. How useful is an APTT value if the value falls below the reference interval?

A.Any abnormal activated partial thromboplastin time, even one that is accelerated or shortened to below a laboratory's reference range, is potentially useful. An accelerated APTT can be due to sample collection (artificial activation of clot formation), a hemolyzed sample (when using mechanical clot detection), overt or non-overt disseminated intravascular coagulation (in vivo activation of clot formation), and elevated factor VIII levels.[1]

That said, APTT tests are usually performed for the initial workup of suspected bleeding disorders, for perioperative testing, and to monitor unfractionated heparin therapy—all of which would typically yield normal or prolonged rather than accelerated APTT results.

The usefulness of a particular APTT result (accelerated or prolonged) should be assessed in the context of the specific clinical scenario.

1. Bennett ST, Lehman CM, Rodgers GM. *Laboratory Hemostasis: A Practical Guide for Pathologists.* 2nd ed. Springer International

Publishing; 2015.

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