

phlebotomy order of draw and tube additives worksheet

Phlebotomy Order of Draw and Tube Additives Worksheet: Your Ultimate Guide

Are you a phlebotomist looking to solidify your understanding of the crucial order of draw and the vital role of tube additives? Or perhaps you're a student striving for excellence in your phlebotomy training? This comprehensive guide provides a complete phlebotomy order of draw and tube additives worksheet, along with detailed explanations to ensure you confidently and accurately perform venipuncture every time. We'll break down the order of draw, explain the function of each additive, and provide tips for avoiding common mistakes. This isn't just a worksheet; it's your key to mastering this essential aspect of phlebotomy.

Understanding the Importance of the Order of Draw

The order of draw in phlebotomy is not arbitrary; it's a critical step to prevent cross-contamination and ensure the accuracy of test results. Drawing blood in the incorrect order can lead to inaccurate lab results, potentially impacting patient care and treatment. Different tubes contain various additives that can interfere with each other if not collected in the correct sequence. For example, additives from one tube could contaminate the blood sample in another, leading to skewed results. This could result in misdiagnosis, delayed treatment, and potentially serious consequences for the patient.

The Standard Order of Draw: A Step-by-Step Guide

The standard order of draw is based on the type of additive in each tube. While slight variations may exist depending on the specific laboratory, the general order remains consistent. Let's break it down:

1. Blood Culture Bottles (Aerobic and Anaerobic): These bottles are collected first to minimize the risk of contamination from other tubes. The anaerobic bottle is typically drawn first, followed by the aerobic bottle.
1. Light Blue Top Tube (Sodium Citrate): This tube is used for coagulation studies. Sodium citrate is an anticoagulant that prevents blood clotting by binding to calcium ions. It's crucial to fill this tube completely to maintain the correct blood-to-additive ratio. Underfilling can lead to inaccurate coagulation test results.

1. Red Top Tube (No Additive) or Tiger Top Tube (Serum Separator): Red top tubes contain no additives, allowing the blood to clot naturally. The serum, the liquid portion of the blood after clotting, is then separated from the clot for testing. Tiger top tubes contain a gel separator that facilitates this separation process.
1. Gold Top Tube (Serum Separator with Clot Activator): Similar to the tiger top, these tubes contain a clot activator to speed up the clotting process and a gel separator for easy serum separation.
1. Light Green Top Tube (Lithium Heparin): This tube contains lithium heparin, an anticoagulant that prevents clotting by inhibiting thrombin. It's used for plasma-based chemistry tests.
1. Dark Green Top Tube (PST - Plasma Separator Tube): These tubes contain both lithium heparin (anticoagulant) and a gel separator to separate plasma from the cellular components.
1. Lavender Top Tube (EDTA): This tube contains ethylenediaminetetraacetic acid (EDTA), another anticoagulant that chelates calcium ions. It's used for hematology tests (CBC, for example). Proper filling is essential to ensure accurate hematology results.
1. Gray Top Tube (Sodium Fluoride/Potassium Oxalate): This tube contains sodium fluoride, an antiglycolytic agent that inhibits the breakdown of glucose, and potassium oxalate, an anticoagulant. It's used for glucose tolerance tests and other tests requiring preservation of glucose levels.

Tube Additives: A Detailed Breakdown

Understanding the function of each additive is critical to interpreting lab results accurately. Let's review:

Sodium Citrate (Light Blue Top): Binds to calcium ions, preventing blood clotting. Crucial for coagulation studies.

No Additive (Red Top): Allows for natural blood clotting, yielding serum.

Serum Separator (Tiger/Gold Top): Contains a gel separator for easy separation of serum from the clot. May also include a clot activator to speed up the clotting process.

Lithium Heparin (Light Green Top): Inhibits thrombin, preventing blood clotting, preserving plasma.
Plasma Separator Tube (PST) (Dark Green Top): Combines lithium heparin and a gel separator for plasma separation.

EDTA (Lavender Top): Chelates calcium ions, preventing clotting. Used for hematology tests.

Sodium Fluoride/Potassium Oxalate (Gray Top): Preserves glucose levels by inhibiting glycolysis.

Avoiding Common Mistakes in the Order of Draw

Several common mistakes can lead to inaccurate results. These include:

Incorrect order: Failing to follow the proper order of draw can lead to cross-contamination.

Underfilling tubes: This is especially important for tubes with additives, as it can alter the blood-to-additive ratio, leading to inaccurate results.

Improper mixing: Insufficient mixing can prevent the additive from fully interacting with the blood, affecting test results.

Using expired tubes: Expired tubes may have compromised additives, affecting their effectiveness.

Phlebotomy Order of Draw and Tube Additives Worksheet: Downloadable Resource

[Insert downloadable PDF link here - this would be a separate PDF file you create with a clear, organized worksheet summarizing the order of draw and tube additives]. This worksheet serves as a handy reference for quick review and reinforcement of the information provided in this article.

Conclusion

Mastering the phlebotomy order of draw and understanding the function of tube additives are fundamental skills for any phlebotomist. By adhering to the correct order and ensuring proper technique, you can significantly contribute to the accuracy of laboratory results and ultimately, to the quality of patient care. Use this guide and the accompanying worksheet to build your confidence and expertise in this crucial area of phlebotomy. Remember, consistent practice and attention to detail are key to becoming a proficient and reliable phlebotomist.

FAQs

1. What happens if I draw blood in the wrong order? Cross-contamination can occur, leading to inaccurate test results. This can delay diagnosis or lead to incorrect treatment.
1. How important is filling the tubes correctly? It's crucial, especially for tubes with additives. Improper filling can alter the blood-to-additive ratio and compromise test accuracy.

1. Can I use the same needle for all tubes? While you can, using a new needle for each tube is best practice to minimize contamination.
1. What should I do if I suspect a tube is expired? Don't use it. Expired tubes may have compromised additives, rendering the sample unusable.
1. Where can I find more information on phlebotomy best practices? Consult reputable phlebotomy textbooks, online resources from professional organizations (like the American Society for Clinical Pathology), and your institution's training materials.

Additional Resources

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