

Guidance on Interpreting Laboratory Values

Busy Day Tool Kit Preceptor Instructions

Learner level: Identify appropriate audience: IPPE and APPP students.

Estimated time to complete: Completion of this module may take several days/weeks and can be done intermittently while completing other assigned projects.

Preceptor Instructions: Ask the student to review and complete activities provided below. Check in with the student periodically to see if there are questions and topics needing clarification. Upon the student's completion of activities, provide several blinded lab results that you feel might help them enhance their understanding of the current rotation and ask the student to interpret during a discussion session. Ask students which activities they thought were most useful/informative.

Student Instructions: Complete the activities as outlined in the module. Provide feedback to your preceptor about one or a two of the topics/activities.

Guidance on Interpreting Laboratory Values (for student pharmacists)

Papers

1. "Using Lab Tests to Monitor Drug Therapy" (from the Pharmacist's Letter) – <http://pharmacistsletter.therapeuticresearch.com/ce/cecourse.aspx?pc=14-218&AspxAutoDetectCookieSupport=1>
2. New England Journal of Medicine: "Disorders of Fluids and Electrolytes."
- *"This is a series of review articles on disorders of fluids and electrolytes. Each is accompanied by a case challenge that highlights the issues raised in the review article."*
<http://www.nejm.org/page/fluids-and-electrolytes>
(Review articles require a subscription to NEJM; cases are open access)
3. Journal of the American Medical Association: "JAMA Diagnostic Test Interpretation."
To access the articles, go to <http://jama.jamanetwork.com/journal.aspx> and search for "JAMA Diagnostic Test Interpretation"
- This is a series of cases, each followed by a quiz and explanation of the answer. Topics are wide-ranging, covering conditions such as hyperkalemia, thrombocytosis, D-dimer for pulmonary embolism, lactate in sepsis, elevated hemoglobin, Lyme disease serology, etc.
Introductory editorial: <http://jama.jamanetwork.com/article.aspx?articleid=1872803>

(Articles require a subscription to JAMA)

Websites

1. General, comprehensive information (from the American Association for Clinical Chemistry) – <https://labtestsonline.org/for-health-professionals/>
- This is an excellent resource
2. Laboratory medicine articles (from Medscape) – <http://reference.medscape.com/guide/laboratory-medicine>
3. Normal Laboratory Values (from Merck Manual) – <http://www.merckmanuals.com/professional/appendixes/normal-laboratory-values>
4. CE program (offered through the Canadian Pharmacists Association) – <https://www.pharmacists.ca/education-practice-resources/professional-development/lab-tests/>
(Registration fee required)
5. Interpretation of lab results (from GlobalRPh) – <http://www.globalrph.com/labinter.htm>

Videos

1. “Introduction to lab values and normal ranges” (from the Khan Academy) – <https://www.youtube.com/watch?v=mGszRbve9s>
2. “Hyponatremia Explained Clearly, Parts 1-4” (from Roger Seheult, MD) – <https://www.youtube.com/watch?v=0a3gt6UQgeM>
<https://www.youtube.com/watch?v=vy-sSQFu5vw>
<https://www.youtube.com/watch?v=VeF5wfsDnQY>
<https://www.youtube.com/watch?v=DY9BP3VVL28>
3. “Hypernatremia Explained Clearly” (from Roger Seheult, MD) – https://www.youtube.com/watch?v=xHA_GTWSDQk
4. “Hyperkalemia Explained Clearly” (from Roger Seheult, MD) – <https://www.youtube.com/watch?v=tyl4Ob522Bw>
5. “Hyperkalemia Treatment Explained Clearly” (from Roger Seheult, MD) – <https://www.youtube.com/watch?v=jNg3zImMsQM>
6. “Medical Acid Base Explained Clearly, Parts 1-8” (from Roger Seheult, MD) –

<https://www.youtube.com/watch?v=4wMEMhvrQxE>
<https://www.youtube.com/watch?v=GmEeKVTPOKI>
<https://www.youtube.com/watch?v=caOXZi6YPnU>
<https://www.youtube.com/watch?v=2wMShkaRrRs>
<https://www.youtube.com/watch?v=e-IJ7SmqnxA>
<https://www.youtube.com/watch?v=u4GwLG2Gcwo>
<https://www.youtube.com/watch?v=YSyEZmW6afE>
https://www.youtube.com/watch?v=ODf_DKfjBGc

Textbooks

1. Lee M. Basic Skills in Interpreting Laboratory Data, Sixth Edition. American Society of Health-System Pharmacists, 2017.