

THERAPEUTIC DRUG LEVELS

WHEN MAY THERAPEUTIC DRUG LEVELS BE NEEDED?

Per Curry International TB Center, Drug Resistant Survival Guide (<http://www.currytbcenter.ucsf.edu/products/drug-resistant-tuberculosis-survival-guide-clinicians-3rd-edition/chapter-3-laboratory>) therapeutic drug levels may be useful in several common circumstances:

- Known or suspected **malabsorption** (e.g., diabetes, gastrointestinal disorders)
- **Lack of expected clinical response** or **relapse** while on appropriate drugs and doses, administered by directly observed therapy (DOT)
- Patients with **few effective drugs** in their regimen, in order to optimize the effect of available drugs
- Patients with potentially significant **drug-drug interactions** such as rifamycins and antiretrovirals
- **EMB** concentrations in patients with significant **renal impairment**

REQUESTING THERAPEUTIC DRUG LEVELS:

Email Heidi Behm heidi.behm@state.or.us for approval of payment for the levels.

LAB ORDERING PROCESS:

Therapeutic drugs levels are available at National Jewish Health Advanced Diagnostics Laboratory.

Information on Rifampin level: <https://www.nationaljewish.org/for-professionals/diagnostic-testing/adx/tests/rifampin,-level>

Information on Isoniazid level: <https://www.nationaljewish.org/for-professionals/diagnostic-testing/adx/tests/isoniazid,-level>

Download and complete the requisition form found here if the TB Program, OHA will pay for the testing:

[Therapeutic Drug Monitoring Order Form](#)

If the TB program is NOT paying for the testing, download the requisition form from the National Jewish website:

https://www.nationaljewish.org/NJH/media/ADX/Requisitions/Pharmacokinetics-requisition_11232015-pdf.pdf?ext=.pdf

BLOOD DRAW AND PROCESSING

Correct timing of the blood draw and processing is essential. Incorrect timing or processing may cause rejection of specimen or incorrect results. Obtaining blood and processing may be done by: the private sector or a hospital or outpatient clinic with coordination by LPHA and billed to the TB Program, OHA.

OPTION ONE

Insured patient: If patient is insured, LPHA should request coordination, ordering and payment by private sector.

OPTION TWO

Blood draw, processing and shipping done by local hospital or outpatient clinic:

- Make arrangements with hospital or outpatient clinic prior to sending patient. Provide hospital or outpatient clinic with instructions from National Jewish Therapeutic Drug Lab on drawing, processing and shipping specimen.

Information on Rifampin level: <https://www.nationaljewish.org/for-professionals/diagnostic-testing/adx/tests/rifampin,-level>

Information on Isoniazid level: <https://www.nationaljewish.org/for-professionals/diagnostic-testing/adx/tests/isoniazid,-level>

And the completed requisition form to bill TB Program, OHA: [Therapeutic Drug Monitoring Order Form](#)

- Follow the directions on the requisition slip regarding the timing requirements of testing. Most blood draws will be 2 hours after the last dose. **Specimens can only be shipped Monday through Thursday so that they arrive on a weekday.** Specimens are not accepted on weekends.
- Give the medication dose by DOT. Assure that the dose is not given within 12 hours of the prior dose.
- Record the exact time and date of administration on the requisition form.
- Complete each column under each drug. The reliability of results is directly related to the accuracy of this information.

- Four drugs can be included on one slip as long as they are drawn at the same time.
- Two tests can be performed using one plain red top 10 ml tube if completely filled and both medications are **drawn at the same time**. (5 mls of blood [2 mls serum] are required *per drug tested*). For example, if drawing isoniazid and rifampin at 2 hours one large red top tube filled to the top is sufficient.
- Depending upon the patient, the LPHA may need to meet or accompany the patient to the hospital or outpatient clinic that is doing the blood draw, specimen processing and shipping to ensure the blood is drawn precisely two hours after DOT. Plan on arriving at the hospital or clinic early so timing is correct.
- The hospital lab or clinic should follow the process outlined in the instructions outlined on the instructions from National Jewish Diagnostic Labs. This will include centrifuging the blood and separating, freezing and shipping on dry ice.