This policy has been adopted by UNC Hospitals for its use in infection control. It is provided to you as information only.

Attachment 1: UNC Hospitals AFB Laboratory Procedures

I. Routine Procedures

A. Smears: Specimens processed by the Clinical Microbiology Laboratory daily, Monday through Friday. AFB (Acid Fast Bacillus) specimens received by 8 am are processed the same day, Monday through Friday. If the specimen is received in the laboratory after 8 am, it will be processed the next working day. Routine setup includes 1 LJ slant, BD MGIT (mycobacterial growth indicator tube), and a smear. Smears are read and reported by 5:00 p.m.

1. Smear results are entered in EPIC.
2. Medical records of patients with positive smears are reviewed by the laboratory for previous positive results.
   a. First positive – will be reported immediately to the requesting physician.
   b. Previous positive – notify physician if greater than one year since previous positive.
3. STAT AFB smears are not performed due to the low sensitivity of staining unconcentrated specimens.

B. Cultures:

1. BD MGIT bottles are read every hour for 6 weeks for indication of growth. When resulted as positive, media from the bottle is stained with Kinyoun stain to look for the presence of AFB. It is also sub-cultured to a 7H11 plate for further identification.
   a. Notification of physician is the same as for primary smears.
2. LJ slants are read once a week for up to 8 weeks. If growth is seen, it is stained for the presence of AFB by Kinyoun stain.
   a. Notification of physician is the same as for smears.
3. Identification is performed by either MALDI-TOF mass spectrometry or 16S rRNA gene sequencing.
   a. Notification of physician is the same as for primary smears, if identification is *M. tuberculosis c*omplex.
4. TB PCR is routinely performed on all first-time smear-positive respiratory specimens, including specimens from patients with cystic fibrosis (CF). PCR is NOT routinely

performed on smear-negative respiratory specimens or extra-pulmonary smear-positive specimens but can be requested by a clinician or Infection Preventionist (IP)

5. TB PCR is performed by the UNC Hospitals Clinical Microbiology Laboratory Monday – Friday. Results are generally available the same evening as the smear result. The sensitivity of TB PCR for smear-positive respiratory specimens is 97-100% whereas the sensitivity for one smear-negative respiratory specimen is 72%. The sensitivity increases to 86% when testing two smear-negative respiratory specimens.

C. Susceptibility testing:

1. Positive cultures of *M. tuberculosis* are sent Monday-Friday to NC State Laboratory of Public Health for antimicrobial susceptibility testing.
2. In the case of increased suspicion of a drug-resistant isolate, the UNCMC Clinical Microbiology Laboratory can send an isolate to the CDC for their MDDR (Molecular Detection of Drug Resistance) service. Additional information can be found at: http://www.cdc.gov/tb/topic/laboratory/UserGuide/submitters.htm. Contact a microbiology laboratory director or fellow should this service be needed as the testing must be pre-approved by CDC. Results are generally available in less than a week.