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**Comparison of Direct Microscopy and Concentration Techniques Using
Household Bleach for the Detection of Acid-Fast Bacilli in Sputum**

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Abstract

Several published studies have demonstrated that the sedimentation and centrifugation concentration techniques which utilize sodium hypochlorite are more efficient in detecting acid fast bacilli in sputum smears compared to the conventional direct smear method. This study was conducted to (1) compare the proportion of AFB-positive samples by direct microscopy with the household bleach centrifugation concentration technique; (2) compare the proportion of AFB-positive samples by direct microscopy with the household bleach sedimentation concentration technique; (3) compare the proportion of AFB-positive samples by household bleach sedimentation with the centrifugation concentration techniques; and (4) compare the cost of the direct smear method, centrifugation concentration technique, and sedimentation concentration technique for detection of AFB. Sputum specimens were collected from TB-DOTS clinics in Miag-ao and San Joaquin, Iloilo and from Medicus laboratories in Iloilo City. The specimens were then processed through the direct smear method, centrifugation concentration method, and sedimentation concentration method. Out of 174 sputum samples included in this study, results revealed that (1) there was no significant difference in the proportions of AFB-positive slides detected using the direct microscopy and centrifugation concentration technique; (2) there was no significant difference in the proportions of AFB-positive slides detected using the direct microscopy and sedimentation concentration technique; (3) there was no significant difference in the proportions of AFB-positive

slides detected using the centrifugation and the sedimentation concentration techniques; and (4) simple cost analysis of the three methods suggests that the direct smear method is the most cost efficient. The findings indicate that whichever method is used would yield almost the same proportions of AFB-positive slides. Internal quality control should be maintained throughout the laboratory work to obtain reliable results, as it is the manner of processing that determines the outcome of this study and its validity.