Evaluation of Turnaround Time (TAT) for Outpatients from Venipuncture
Accession to Reporting Test Results of Blood Chemistry and Blood Cell Analysis to Physicians

Emi TERUYA, Megumi S. YAMAUCHI, Nobuhisa YAMANE, Isamu NAKASONE, Ayano MIYAGI, Tamami T. NAGO, Kohei UECHI and Yasushi HIGASHIUESATO

Abstract In response to the revision of social medical insurance policy, in which hospital clinics can additionally charge for laboratory testing when the test results are presented to an outpatient in a print-out form on a visiting day, we evaluated laboratory-spending times, so-called turnaround times (TATs). A total of 14,802 outpatients during the period from October 2010 to May 2011 were enrolled. TATs from venipuncture accession to completing blood collection revealed a log-normal distribution with 5 to 6 min of mode and 10^{0.95\pm0.26} (4.90 to 16.2) min of mean \pm standard deviation. Order waiting time figured a half-normal distribution, 50%-tile and 90%-tile being 4 and 16 min, respectively. TATs of blood collection and order waiting time were significantly influenced by days of the week and accession time. Through analysis of TATs from specimen receipt to reporting test results, it became apparent that the tests determined by immunoassay and erythrocyte sedimentation rate (ESR) required more minutes when compared to the remaining tests. Total TATs from venipuncture accession to reporting test results ranged 28 to 29 min (50%-tile) for complete blood count and hemoglobin A1c, whereas those of endocrinology and tumor markers were 65 to 73 min.

In conclusion, the tests determined by immunoassay are rate limiting for rapid reporting efforts in clinical laboratories. Secondly, TATs of blood collection are mostly influenced by order waiting time depending on days of the week and accession time. At present, there is no target value for TATs, however it is important to recognize the necessity to shorten laboratory-spending TATs.

Key words: Turnaround time, TAT (所要時間), blood collection, venipuncture (靜脈採血), blood chemistry (血液生化学検査), blood cell analysis (血球検査), rapid reporting (迅速報告), outpatient (外来患者)