Recently, President Obama signed into law H.R. 4872, the Health Care and Education Affordability Reconciliation Act of 2010. This legislation is expected to have a significant effect on health care for ordinary American citizens. Under this health care reform, typical American citizens would be able to keep the insurance they have, pay less for preventative care, and no longer have to worry about being denied for a claim based on pre-existing conditions or see limits on their insurance coverage. Additionally, the bill includes several provisions related to the Medicare program. For those seniors enrolled in Medicare Part D for their prescription drug coverage, it closes the “donut hole” within the decade and provides a $250 payment in 2010. In addition, H.R. 4872 provides free preventative care under Medicare that will keep seniors healthier, longer (U.S. Public Law, 2010).

A significant effect of H.R. 4872, however, is in its impact on cost containment, particularly for hospitals. Beginning in 2010, H.R. 4872 would reduce annual market basket updates for inpatient hospital Medicare providers, and adjust payments to force productivity improvements on these hospitals. In subsequent years, the Bill would limit Medicare payments to qualifying hospitals in counties with the lowest quartile Medicare spending for 2011 and 2012.
Furthermore, the Bill would reduce Medicare payments that would otherwise be made to hospitals by specified percentages to account for excess (preventable) hospital readmissions (Kaiser Family Foundation, 2010). One thing that appears certain is that in future years hospitals are going to receive less and less Medicare reimbursement funds for the patient services they provide.

An area of hospital services that reflects high patient demand is laboratory services. Virtually all hospital in-patients require laboratory blood work daily, and a number of hospitals outsource this routine blood work to off-site privately held labs. One of the largest of these private labs is Laboratory Corporation of America(R) Holdings (LabCorp(R)), which has testing sites worldwide. LabCorp's earnings grew in the second quarter of 2010 by 4.2 percent compared to the first quarter, and net earnings for the second quarter were $153.7 million on revenues of $1,194 million (Lavender, 2010). In fact recent profits have been very good, enabling LabCorp Directors to authorize a new stock repurchase program under which LabCorp may purchase up to an additional aggregate of $250 million of its Common Stock (Anonymous, 2010).

Given the high demand and lucrative nature of routine laboratory tests, some hospitals have brought lab work inside the hospital and look for ways to reduce costs while maintaining high quality. The focus of this study is a medium sized hospital in the Southwestern U.S. (Hospital) which seeks to refine and upgrade its laboratory services unit to the highest levels of quality. The Hospital has turned to the College of Business in a regional private university (Business School) for statistical help in updating the computation of reference intervals for its specific patient population. These updated reference intervals will be used to compare a patient’s results for a standard lab test.

Clinical laboratory tests are very important because 80% of physician’s medical decisions are based on laboratory reports (Katayev, Balciza, and Seccombe, 2010). These tests include standard pathology blood serum tests based on reference intervals. For example, for an LDL cholesterol test the reference interval for a healthy patient is between 70 and 160 mg/dl (MayoClinic.com, 2010). The result of a clinical test has no value unless the appropriate reference interval is available for its interpretation.

Reference intervals are available for the population in general, but reference intervals should be calculated for the population being tested. According to the Clinical and Laboratory Standards Institute in its C28-A2 standard document on reference intervals, emphasizes the importance of validating reference intervals. Reference intervals need to be updated periodically (Paxton, 2009).

The purpose of this study is to analyze laboratory test results from a representative group of patients to determine reference intervals for specified clinical tests. Data filtering of test samples will be required to separate healthy from unhealthy patients, in order to obtain a healthy patient population to determine valid reference intervals. This will validate that the calculated reference intervals represent the reference range for a healthy subject.

The rules for determining the qualifications of a healthy patient will be determined by hospital personnel. HIPAA rules for patient privacy will have to be followed. This can be accomplished by having hospital personnel remove all identifying fields from the data that will identify a patient, for example name, address, insurance, and social security numbers.

Part of the data analysis will be to separate the healthy from unhealthy patients and also to guarantee the security of the data. Appropriate statistical methods will be applied to the data to determine reference intervals.
References


