**ABSTRACT**

The importance of blood volume for detection of BSIs has been well documented. Recently, improved diagnostic sensitivity (7.2%) was demonstrated for 30 vs. 20 ml blood cultures (BCs) in adults. Arguably, increased BC volumes can improve patient care. In addition, hospitals receive higher reimbursement for patients with documented septicemia, providing a potential financial incentive for 30 ml BCs.

**BACKGROUND**

The Agency for Healthcare Research and Quality lists sepsis as the most common cause of death in hospitalized patients. The annual cost to hospitals associated with conversion to 30 ml BCs was estimated to be $9667. A 7.2% increase in secondary BSIs would result in detection of 50 additional annual cases and an increased Medicare reimbursement of $843,479. Comparative MR data for 20 ml BCs drawn at RWJUH from 1/1/12 to 3/31/12 was projected to be $483,350. The incremental cost of 30 ml BCs would result in detection of 34 additional septicemias annually and increased Medicare reimbursement of $483,350 annually.

**METHODS**

Results from 20 ml BCs drawn at RWJUH from 1/1/12 to 3/31/12 were reviewed retrospectively and positive cultures were categorized as representing true infection, contamination, or unknown significance based on published criteria. The RWJUH Medical Record and Accounts Receivable Departments provided actual Medicare reimbursement (MR) data for patients with selected ICD-9-diagnostic codes. Costs of reagents, equipment, and phlebotomist and technologist time and effort were obtained from the Microbiology Laboratory. These data were used to provide an estimate of the expected annualized increase in MR and costs associated with conversion to 30 ml BCs.

**RESULTS**

Based on our calculations, the projected mean MR for 464 annual primary BSIs was $24,808 per episode. An expected 7.2% increase in the number of primary BSIs detected using 30 ml BCs would result in an additional 34 annual cases and MR of $843,479. Comparative MR data where septicemia was a complication of another diagnosis were available for 4 ICD-9 codes: laparoscopic cholecystectomy, disorders of the biliary tract, simple pneumonia and cellulitis. Mean MR for each such episode (704 annually) was projected to be $9667. A 7.2% increase in secondary BSIs would result in detection of 50 additional annual cases and an increased MR of $843,350 annually. The annual cost to the hospital associated with conversion to 30 ml BCs was estimated to be $157,798. Taken together, the net profit to the hospital would be estimated to be $1,169,031 per year from 30 ml to 20 ml BCs.

**HYPOTHESIS**

We hypothesized that the institution of 30-ml BCs would be cost-effective and result in increased hospital reimbursement.

**METHODS**

Assessed blood cultures from a retrospective cohort of adult patients (18 years of age or greater) from 01/01/2012-03/31/2012 at Robert Wood Johnson University Hospital in New Brunswick, NJ. A 7.2% increase in secondary BSIs would result in detection of 50 additional cases and an increased Medicare reimbursement of $483,350 annually.

**REFERENCES**