Calgary Laboratory Services
Report to the Community

2010

BUILDING BLOCKS TO LABORATORY EXCELLENCE
Calgary Laboratory Services (CLS) is a medical diagnostic laboratory that offers a full range of laboratory services to the Calgary Region and parts of Southern Alberta. Every year more than two thousand physicians access our services to help diagnose, treat and monitor their patients’ health.

Through our community collection sites, mobile services, and hospital laboratories, we serve over a million people each year and perform approximately 21 million tests annually.

We invest in the future of healthcare by providing training programs for tomorrow’s laboratory professionals, and by taking an active role in medical research through the development of improved methods of disease detection, and new drugs and therapies.

From collecting blood samples to developing new treatments for patient care, we play an important role in the delivery of healthcare.

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Communications Department
CLS Vision, Mission & Values

**Vision**
World leaders in laboratory medicine.

**Mission**
Improving health and well-being through laboratory diagnostic excellence, education and research.

**Values**
At CLS we take **PRIDE** in who we are and what we do through:

- Professionalism
- Respect & Caring
- Integrity
- Dedication
- Excellence
In this year’s Report to the Community we celebrate the employees of CLS. The professionalism of our skilled and dedicated employees has earned CLS a high level of respect throughout the health care field and I feel privileged and very proud to serve as the Chief Operating Officer.

Calgary Laboratory Services provides service 24 hours a day, 365 days a year. For many patients, laboratory testing is an invisible side of medical care. However, medical laboratory professionals play an integral role in the health of Albertans. Every day, our employees provide test results, interpretations and consultations.

Laboratory medicine is a crucial part of the entire patient care process with up to 70% of clinical decisions being based on laboratory results. Our robust diagnostic and consultative services are closely linked to quality education and thriving research. These activities together support CLS’ pursuit of excellence and continue to guide us every day.

Results of laboratory tests often identify the presence of disease in its earliest stages when the possibility of a cure is greatest and when treatment is least costly. The results also guide the effectiveness of treatment and assess the ongoing care of patients.

Over the last several years, the landscape of health care has been challenging. However, despite the many challenges, CLS has remained resilient and moved ahead with improvements that meet the growing needs of our community. Some of these changes are immediately visible such as the introduction of web-based appointment bookings; others are less visible such as development of an aggressive Pandemic Plan.

I am pleased to report that, as a key member of today’s health care team, Calgary Laboratory Services has achieved many notable accomplishments in 2010, which, once again, enhanced our ability to provide quality care. These achievements are a credit to the dedication and expertise of our employees.
Finally, in a world of transition, we must remember there are some things that should not and must not change – these are our enduring values and firm conviction to serve the evolving health care needs of Albertans.

Paula Hall
Chief Operating Officer
Calgary Laboratory Services

World Leaders in Laboratory Medicine
Calgary Laboratory Services, a wholly owned subsidiary of Alberta Health Services, is one of the largest multi-site integrated acute care and community laboratory practices in North America providing multi-disciplinary diagnostic laboratory and pathology services to Albertans. Through our community collection sites, mobile collection services, and hospital laboratories, we serve over a million people each year and perform more than 22 million tests annually.

Recognized as one of Alberta’s top employers for the past three consecutive years, CLS is a world-class health organization that is committed to improving health and well being through laboratory diagnostic excellence, education, and research.

We have over 1800 staff and physicians. Every minute of every day, our work touches someone’s life. The commitment, dedication and hard work of our people make CLS responsive to the health care needs of the people we serve.

CLS is dedicated to continuous improvement in client service. Our five pillars: Quality, Access, Sustainability, Innovation, Relationships, provides the focus for CLS strategic planning and have supported our mission during the year. The remainder of this report is categorized by these pillars.

Our commitment to caring is also a commitment to always look for ways to be better at what we do. This assurance will continue to summon our ability to think and act in new ways.
Governance and Reporting Structure
CLS and the University of Calgary (Department of Pathology & Laboratory Medicine), through an Affiliation Agreement, recognize the belief that teaching and research are integral parts of high quality patient care, and that academic laboratory medicine plays a crucial role in developing new knowledge and in applying it to improved patient diagnosis. This creates a relationship acknowledging mutual collaboration in the areas of health services relating to patient care, clinical teaching and research and this collaboration is an integral part of such health services relating to Pathology and Laboratory Medicine.

The Department of Pathology and Laboratory Medicine (DPLM) comprises the medical and scientific staff for CLS. It is composed of 4 CLS Divisions and has 66 primary clinical MD appointees and 11 clinical PhD scientists. There are 34 members with University of Calgary Geographic Full-Time academic appointments and 43 with Clinical or Adjunct academic appointments, as well as one part-time locum. The Medical/Scientific staff are located at all acute-care hospital sites, at the Diagnostic and Scientific Centre, and at the University of Calgary Health Sciences Centre, Heritage Medical Research Building, and Health Research Innovation Centre.

Faculty members with primary appointments in the DPLM are active in research. We held $2.44 million in external grant funding as principle investigators and published 102 peer-reviewed papers as well as 11 book chapters and a book in 2009. We also make very significant contributions in teaching. Our postgraduate clinical training programs (Anatomic Pathology and Neuropathology Residency Training programs and Fellowship programs in a variety of areas) trained 16 residents and 3 fellows in 2010. Our faculty contributed several thousand hours of post-graduate medical education and ~1200 hours of undergraduate medical education teaching.

James R. Wright, Jr. MD, PhD
Head, Department of Pathology & Laboratory Medicine
The purpose of strategic planning is to provide a road map to guide an organization and the decisions it makes. It provides a point of reference which is used, assessed and updated as the environment changes.

Each year, the CLS leadership team establishes the organizational areas of focus for the organization. In 2010 the following 5 pillars were used to build on the foundation that CLS has already established and work in conjunction with the strategic plan and goals of Alberta Health Services.

The CLS Strategic Framework is structured around the following five pillars:

1. Quality: CLS will provide and promote safe, effective and patient-focused services.
2. Accessibility: CLS will ensure that appropriate laboratory services are accessible and available.
3. Sustainability: CLS will live within our means and allocate resources (financial, human and infrastructure) optimally now and in the future.
4. Innovation: CLS will be an innovative organization that leads in planning and influencing the delivery of laboratory services.
5. Relationships: CLS will build and maintain those key relationships, both within the health system and outside it, which are necessary for an effective health/laboratory system.

Quality, accessibility, and sustainability are challenges facing health care systems across the nation. Meeting these challenges requires us to focus on the system as a whole, while addressing key priorities. Exploring innovative solutions to these challenges and establishing collaborative relationships will support our vision as World Leaders in Laboratory Medicine.
CLS will provide and promote safe, effective and patient–focused services.

Calgary Laboratory Services’ pursuit of excellence comes from our commitment to providing exceptional laboratory services to support the care of patients. We pursue our vision to be World Leaders in Laboratory Medicine with a comprehensive quality management system, and a strong focus on patient safety.
Pursuit of Excellence

CLS maintains a systematic organization-wide program to monitor quality and the appropriateness of our services. This program is designed to meet accreditation, legal and regulatory requirements, recognized standards of laboratory practice and operational needs. An excellent quality management system is in place to ensure continuous quality improvement and efficient, effective operations.

Our commitment to quality—to following optimal procedures in everything we do—means that when we perform any test, both the patient and their physician can be assured that the results we report are accurate.

CLS maintains a comprehensive Quality Management System based on Quality System Essentials (QSEs) that outline key elements needed by CLS to:

- Meet accreditation, legal and regulatory requirements, recognized standards of laboratory practice, and operational needs.
- Continually monitor the quality and appropriateness of our services.
- Ensure continuous quality improvement of CLS processes.
- Consistently provide cost-effective services through efficient, effective business operations.

CLS recognizes that in order to design, implement and carry out the necessary programs and activities required to meet the objectives of our Quality Management System, the appropriate organizational structure and resources must be in place. As evidence of CLS’ commitment to quality, the CLS Quality Department provides dedicated resources to oversee compliance with the requirements of the quality management system and as an independent department, can be unbiased in their role as monitors of laboratory processes and CLS’ risk management system.

Quality Indicators

CLS regularly assesses our quality management system and the quality of key aspects of our services through the development and monitoring of performance indicators. Indicators are reviewed regularly to ensure we continue to meet our high standards. These metrics include, however are not limited to:

- Test and patient volumes
- Patient wait times at Patient Service Centres in the community
• Turnaround times for operational processes
• Quality assurance metrics, for example rejected specimen rates and external proficiency testing results
• Number of patient safety learning reports and severity
• Environmental Health and Safety incident rates
• Customer satisfaction

CLS has a comprehensive assessment program designed to meet accreditation, legal and regulatory requirements, recognized standards of laboratory practice, and operational needs. CLS laboratories are accredited through the:

College of Physicians and Surgeons of Alberta (CPSA)

• The College’s accreditation program adopts and enforces standards for the safe and effective delivery of laboratory services in Alberta.
• The program requires an on-site inspection of all CLS testing laboratories every four years with the next on-site inspection scheduled for 2013.
• Plans are currently underway to register, inspect and accredit a new CLS testing laboratory opening in the Cochrane Community Health Centre in February 2011.

American Society for Histocompatibility and Immunogenetics (ASHI)

• The goal of ASHI accreditation is to maintain the highest standards of reliability and quality in histocompatibility testing laboratories (Tissue Typing).
• This accreditation process requires alternating years of on-site inspection by ASHI Inspectors and rigorous self-inspection.

Foundation for the Accreditation of Cellular Therapy (FACT)

• The CLS Cellular Therapy laboratory processes, cryopreserves and stores cellular therapy products for transplant and is a major partner in
Quality

the Alberta Bone Marrow Transplant Program.

- All aspects of the transplant program, including the Cellular Therapy laboratory were inspected in 2009 with the next on-site inspection planned for early 2012.

Health Canada Cells, Tissues & Organs (CTO)

- The CLS Cellular Therapy Laboratory was inspected by Health Canada in December 2009 and found to be fully compliant. Health Canada CTO compliance is mandatory for all transplant programs in Canada.

> > On an average weekday, the CLS Mailroom processes between 10,000–12,000 patient reports.

In addition, CLS participates in other Alberta Health Services (AHS) accreditation programs where the processes or programs being evaluated utilize laboratory services. In 2010, CLS was involved in the following on-site inspections:

Accreditation Canada (October)

- The surveyors focused on specific hospital or urgent care processes identified as having a significant impact on patient/client safety and quality of care/service.

- Laboratory staff at acute care and urgent care sites were available to provide information to surveyors when laboratory services were identified as part of one of the processes being evaluated.

Trauma Association of Canada Accreditation (November)

- Primary goal of this accreditation program is to ensure optimal care and best outcomes for trauma patients throughout Canada.

- The CLS Transfusion Medicine division was actively involved in this year’s inspection at the Foothills Medical Centre and the Alberta Children’s Hospital.

CLS is also accredited as a training institution for medical residents and students, medical laboratory technologists and medical laboratory assistants.
2010 Quality Improvement Initiatives

Quality initiatives may be carried out in response to specific patient events, in response to trends or themes identified via the Safety Learning Reporting System, or indirectly as part of ongoing efforts to improve the quality of laboratory services. Initiatives undertaken in 2010 include however are not limited to the following:

- Increased staff awareness of the laboratory’s role in patient safety by:
  - Publishing special issues of the CLS Quality Department newsletter to highlight patient safety and other quality management requirements.
  - Endorsing and promoting Canadian Patient Safety Week (CPSW) throughout CLS in order to create awareness of patient safety issues and share information about best practices. CPSW is an annual, national initiative of the Canadian Patient Safety Institute (CPSI).

- Evaluated products or supplies to improve quality and/or patient safety, including:
  - Conducting a formal evaluation of lancet devices in response to concerns reported in the Safety Learning Reporting system regarding extended bleeding after neonatal blood collections.
  - Reviewing the use of amber pour-off tubes to reduce specimen and instrument problems associated with the use of foil-wrapped tubes for tests that are adversely impacted when specimens are exposed to light.
  - Moving to the use of a different color RTSIS (Regional Transfusion Service Identification System) band for Pre-Assessment Clinic patients to clearly identify which bands have 31 versus 4 day outdating for Type and Screens. This reduced the need for specimen recollections due to premature removal of the RTSIS bands when only one color of band was used.
  - Performing a urine container audit in response to problems identified through the Safety Learning Reporting System.
  - Developing a procedure for “Monitoring Breast Fixation” as a quality control measure for estrogen and progesterone receptor status.
Quality

- Implemented or modified processes to improve quality, efficiency and/or safety of laboratory services, for example:
  
  - Modified Laboratory Information System registration screens to prevent/reduce registration errors that can result in an overlay of one patient’s results on another patient’s record.
  
  - Implemented a change to allow Cerebrospinal Fluid (CSF) specimens and specimens requiring transportation on ice to be transported by pneumatic tube systems to reduce pre-analytical TAT and better maintain specimen integrity.
  
  - Implemented a new add-on test process for orders from Emergency Departments and Urgent Care Centres to standardize the process, make it more efficient and implement a tracking mechanism for add-on testing.
  
  - Revised the adrenal venous sampling form used by Diagnostic Imaging, and changed the handling/data entry process followed by CLS staff in an effort to streamline data entry and reduce specimen mix-ups related to the complexity of this test.
  
  - Established a new process for managing blood product inventory in satellite refrigerators located outside the laboratory to reduce wastage or inappropriate return of blood products to the laboratory.
  
  - Standardized the pre-analytic on-going competency assessment program across four departments – Patient Service Centres, Operational Services in acute care sites, Research and Mobile Collection Services. With this new program, patients can be guaranteed the level of competency standards are the same regardless of where procedures such as phlebotomy are performed.
  
  - Collaborated with external partners to add a link to the CLS website from the hospital information system screens where CSF orders are placed, in order to provide easy access to Cerebrospinal Fluid (CSF) collection guidelines and ultimately reduce collection problems related to this specimen type.
Customer Feedback

CLS encourages patients, their families and healthcare service providers to communicate their positive feedback as well as any suggestions or concerns they may have about our services. Good communication with laboratory personnel is important at all times, and even more so if there is a concern. In most cases, issues can be resolved quickly by speaking with laboratory personnel at the point of care/service.

As of June 2010, information about the CLS Feedback policy and process is available on the CLS website. In addition, there are now more ways for patients and healthcare providers to submit feedback or communicate a concern that was not resolved at the point of care/service. They may:

- Complete a CLS Feedback Form, which are available at all CLS Patient Service Centres, hospital Outpatient Collection Laboratories or on the CLS website.
- Call the central intake telephone messaging system.
- Contact the site supervisor or manager.

CLS highly values feedback and uses it to make operational and system changes in order to continually improve the quality of services provided by CLS.

Anatomic Pathology

CLS Anatomic Pathology has been working with Alberta Health Services on the development of a Provincial Quality Assurance program. The program identifies quality practices and risks throughout the path of workflow with a focus on surgical pathology.
New automated instruments were implemented at both the South Calgary and Airdrie Health Center testing laboratories. Hematology equipment is now standardized at all health centres.

Point of Care Testing (POCT) refers to the performance of laboratory analytical tests, by various Health Care Professionals, at the point of patient care. The quality assurance (QA) of POCT is under the direction of the laboratory.

In 2010, CLS POCT supported the set up and validation of twenty new Blood Gas Analyzers within the acute care sites.

The CLS Blood Utilization Management Plan (BUMP) is undergoing Provincial validation for use as a provincial and hospital model in Alberta. The purpose of the BUMP is to maintain a practical, efficient, prioritized and safe transfusion service during a blood shortage. Although designed for shortages, CLS is now using the BUMP to optimize our daily blood inventory and utilization in our operations.
CLS Transfusion Medicine has implemented the Massive Transfusion Protocol at all of the acute care sites. The protocol may be initiated when a patient is experiencing ongoing major bleeding or is expected to require a large amount of blood products. The Massive Transfusion Pack (MTP) prepared by the TM department benefits the patient and appears to be associated with improved outcomes.

Environmental Health & Safety (EH&S) launched a new MSDS management system which electronically manages the storage, search, and revision of all MSDS’ for CLS. The previous system involved one person managing all this information for an inventory of approximately 1,500 chemicals. This new system is: cost/time efficient, as there is no longer a need to manually prepare department chemical inventory/MSDS packages; environmentally friendly, as MSDSs can be sent from site to site and viewed electronically; and ensures MSDSs are always kept current, which is a legislated requirement.

Health and safety remains a key principle for Calgary Laboratory Services. Employees at all levels understand that health and safety is the responsibility of everyone working together to ensure staff, visitors, contractors and anyone affected by CLS’ operations are kept healthy and safe.

Key initiatives to enhance employee health and safety include:

- The introduction of a 2nd generation safety engineered butterfly needle which is anticipated to decrease needle stick injuries by at least 80%.

- Ongoing involvement from the EH&S Department on construction and renovation projects.

- Diligent staff training in areas including Workplace Hazardous Materials Information System (WHMIS), Transportation of Dangerous Goods (TDG), First Aid/CPR, Respirator Use etc.

- Continued front line support and dedication from the Safety/WHMIS Designate Team.
Quality

- Management System improvements for the MSDS inventory, and tracking accidents/incidents/illnesses for trending and continuous learning

Dedication and commitment to health and safety is demonstrated by CLS’ voluntary participation in annual COR (Certificate of Recognition) audits. This audit process evaluates CLS’ Health and Safety program against a set of established standards by certified auditors and the audit reviewed as a quality assurance practice by the Alberta Safety Council. The audit process facilitates continuous improvement via creating an action plan based on recommendations made by the auditors. In the Fall of 2010, CLS successfully attained a passing mark of 89% from our audit, and has maintained the COR certification.

Microbiology

- A new test to improve the detection of HIV-1 groups and subtypes was implemented. The methodology also improved workflow efficiency; turn around time and quality assurance of the assay.

- Point Prevalence Study in conjunction with Infection Prevention & Control (IP & C) was conducted. Over 3000 swabs from the four acute care sites (were tested for Methicillin Resistant Staphylococcus aureus (MRSA) and Vancomycin Resistant Enterococci (VRE) over a 3 week period. Statistics were compiled from the results and will be used by IP&C to develop strategies to decrease ongoing transmission in the acute care sites as well as determine future MRSA and VRE screening strategies in the Calgary zone.

Key Metrics

The Key Metrics Report is a monthly summary of patient wait times, turn-around-times (TAT) for all laboratory divisions, quality assurance and safety. The report is produced and utilized to facilitate sharing of information between clinical and operational divisions, at the corporate level and with external stakeholders/colleagues and monitor trends, identify opportunities for improvement activities and/or to identify issues requiring Executive/Management direction and support.

In 2010, CLS not only met our key measurements, we also exceeded in many. Patient Wait Time has been continuously improving over the past few months.
Clostridium difficile Testing at Calgary Laboratory Services

Clostridium difficile is an important anaerobic, spore forming bacteria that can cause a spectrum of gastrointestinal illness associated with antibiotic use, from mild diarrhea to colitis (inflammation of the large intestine) with complications that can even lead to death.

C. difficile can be found in feces but most healthy individuals are not colonized with C. difficile. Individuals can introduce the organism by touching surfaces in the environment contaminated with feces from infected patients and then touch their mouths or eyes. Healthcare workers can spread the bacteria to their patients if their hands are contaminated.

When exposed to C. difficile, usually the normal bacterial flora (good bacteria) in the intestines will prevent C. difficile from surviving. However, treatment with antibiotics alters or disrupts the normal levels of the normal flora. When this alteration occurs, C. difficile has the chance to thrive and produce toxins which results in clinical symptoms. Patients who receive antibiotics are at risk of developing C. difficile associated disease (CDAD), both in the community and in the hospital.

To diagnose this infection, a clinician recognizes the clinical symptoms, signs and risk factors for CDAD and would request the patient to collect a stool sample and send to the laboratory for testing. When the diagnosis is made, the offending antibiotics are stopped (if possible) and specific antibiotics for C. difficile are started to treat the CDAD.

To make the diagnosis of CDAD, many laboratories, including CLS, have been using enzyme immunoassay (EIA) methods to detect the presence of toxins produced by C. difficile. Although these assays are favourable from a labour and cost standpoint, over the years, research has shown that these EIA methods have inadequate sensitivity (30-95%). In other words, these tests are negative in a portion of cases where the disease is actually present. Based on this sub-optimal performance, recent guidelines from American and European infectious disease and microbiology bodies have recommended methods other than toxin EIA for making the primary diagnosis of CDAD.

Other methods available include cell-tissue culture and toxigenic stool culture. Both methods are slow and labour intensive. More recently, molecular methods, such as polymerase chain reaction (PCR), have been developed to detect genes coding for the key toxins that cause disease. Although expensive, PCR provides better turn around times than the labour intensive culture methods and have excellent sensitivity and specificity compared to the EIA methods for toxin.
Recognizing the performance issue of the toxin EIAs and the need for change based on guidelines, CLS evaluated and then moved from our current method of toxin EIA testing to a new algorithm that consists of C. difficile antigen EIA and PCR.

The EIA antigen test looks for the presence of C. difficile in the patient’s stool sample and is more sensitive than the toxin EIAs (90-100%). Not all C. difficile strains produce the toxins that cause disease, so further testing is required to confirm that a toxin-producing strain of C. difficile is actually present. This further test is a PCR which detects the gene which codes for toxin B, an important toxin for causing disease. Although the PCR method was the most sensitive (98%) and specific (99%) in our evaluation, costs and labour were prohibitive to implementing this test as the primary test. Implementing the sensitive screening antigen EIA allows us to select out those specimens that have the organism present. This two step algorithm decreases the number of PCR tests by about 75-80% however still maintains a high sensitivity and specificity.

With these changes in tests and algorithms on September 14, 2010, we have improved the quality of our C. difficile testing and reporting, resulting in an increase in our detection rates of CDAD from a 7.6% positive rate to a 12.6% positive rate. This has two major implications for patient care. First, clinicians are better able to diagnose their patients and start appropriate therapy. Second, better diagnosis aids the infection prevention and control departments in long term care and hospital settings to engage in protocols and procedures to prevent the transmission to other patients who could be at risk of developing CDAD.
02 Accessibility

The Building Blocks to Laboratory Excellence

CLS will ensure that appropriate laboratory services are accessible and available.
Service Improvements at Calgary Laboratory Services (CLS)

Web Based Patient Appointment Bookings

Web-based appointments, which were introduced in the fall of 2010, have dramatically changed the way patients interact with CLS.

In addition to our current patient appointment line service, CLS now offers a web based option accessible from our web site at www.calgarylabservices.com. Using the Click2Book option patients are able to schedule, cancel or change their own laboratory appointments at any time from the convenience of a computer with an Internet connection. The system sends confirmation of the appointment(s) by email. The CLS Appointment Line staff are still available to answer questions and assist with appointments by telephone.

Expanded Hours of Service for Patient Service Centres

To fit the needs of patients and improve our capacity to meet demand, we have increased morning hours for selected Patient Service Centres and opened one more site on Saturdays.

Enhanced Mobile Collection Services

- Provision of mobile collection services to the new Garrison Green Long Term Care Center.
- Re-routing of STAT testing to the closest testing laboratory to decrease the time to I report results.
- Implementation of Pushbutton Butterfly needles to enhance staff and patient safety.
Planning for the laboratory, which will be one of many services in the South Health Campus, is well underway. The campus, which is anticipated to open in early 2012, will serve southeast Calgary and the surrounding rural areas.

The complex will be called a “campus,” to take into account the diverse activities on the site, such as emergency care, inpatient and outpatient care, wellness services, and research and education of health care professionals for the future.

> In 2010 the 33 CLS vehicle fleet put on 1.6 million km or about the same distance to go from the Earth to the Moon and return.... twice.

Stat samples from four North West Patient Service Centres are now routing to the Alberta Children’s Hospital (ACH) laboratory to support standardization of work processes, faster Stat turn around times, improved utilization of resources at ACH, and more efficient workflow at the Diagnostic and Scientific Centre (DSC).

The Foothills Medical Centre (FMC) Transfusion Medicine Department completed the training of Alberta Children’s Hospital (ACH) staff in Transfusion Medicine and transitioned the testing to ACH. ACH now has 24/7 onsite TM coverage therefore, improving the turn around times for the provision of blood products.
Accessibility

Improved Accessibility of Transfusion Medicine Products Used ‘At Home’

Rural Partnership for Blood Transfusion Testing

D-Dimer Testing Offered at all Health Centre Testing Laboratories

Transfusion Medicine has increased community accessibility to Home Use products by allowing some patients, who either have limited access to transportation or frequent infusion needs, to pick up their products at the hospital nearest to them. This means all four main hospitals in Calgary are now dispensing Home Use products, rather than just out of the Rare Blood and Bleeding Disorder Clinics.

The transition of CLS and AHS Calgary zone rural sites to Pathnet Millennium Laboratory Information System (LIS) has allowed for new partnerships within the Transfusion Medicine community. With a single computer platform we are now able to collect specimens for pre transfusion testing at any of the Millennium sites and they can be tested at any of the Transfusion Medicine testing laboratories. This has enabled enhanced access for patients, in particular those living in the rural areas surrounding Calgary. These patients can now have their blood collected and tested close to home prior to their surgery, day medicine or Tom Baker Cancer Centre clinic appointments. This enhanced access to care when combined with initiatives from previous years now allows patients to have their pre transfusion testing blood work collected in any laboratory in Southern Alberta including Red Deer.

D-dimer tests are ordered, along with other laboratory tests and imaging scans, to help rule out, diagnose, and monitor diseases and conditions that cause hypercoagulability, a tendency to clot inappropriately. One of the most common of these conditions is Deep Vein Thrombosis, which involves clot formation in the deep veins of the body, most frequently in the legs.

All Health Centre testing laboratories now offer on site D- Dimer testing, which expedites the treatment and discharge or transfer of patients seen in the Urgent Care Centres.
Unprecedented Increase in Vitamin D Testing

Expansion of Intra-Operative Parathyroid Hormone Analysis During Parathyroidectomy Surgery at PLC and RGH

Molecular Hematology Service Expanded

With all the media information on Vitamin D over the last couple of years the public is very interested in knowing their Vitamin D result. In the month of October 2005 the Immunochemistry department at Calgary Laboratory Services tested 489 samples for Vitamin D. Since then there has been a huge increase in workload and in the month of September 2010, 14,633 patient samples were tested.

This procedure assists the surgeon in locating the correct gland for excision and reduces patient recovery time. Since 2004, it has been available at Foothills Medical Centre (FMC). CLS has expanded this same service to the Peter Lougheed Centre and the Rockyview General Hospital.

The CLS Molecular Hematology department began offering specialized testing to extra-regional clients.
New Health Centre Testing Laboratory (HCTL) Opened in Cochrane

Improved Availability of Thawed Plasma

The Health Centres are strategically located in the south (South Calgary Health Centre), downtown (Sheldon M Chumir Health Centre), far north (Airdrie Community Health Centre) and far west (Cochrane Community Health Centre). The HCTL provide stat testing for the Urgent Care Centres. They also provide timely testing for stat requests for any Patient Service Centre (PSC) located within the Health Centre.

Traditionally, when a physician requested plasma for transfusion there was a delay of 20 to 30 minutes while the plasma thaws. For critically ill haemorrhaging patients, this delay can contribute to a worsening of their coagulopathy making it more difficult to correct. In September of 2010 we implemented pre-thawed plasma for urgent transfusion requests at the Foothills Medical Centre (FMC) and Peter Lougheed Centre (PLC) sites. The goal of this initiative was to provide immediate access to plasma when urgently required without increased wastage of plasma due to products exceeding the expiry. There are now a minimum of four units of group compatible plasma immediately available at all times at these sites. An added benefit for Transfusion Medicine staff has been a decrease in stress when faced with a massive transfusion situation.
03 Sustainability

The Building Blocks to Laboratory Excellence

CLS will live within our means and allocate resources (financial, human, and infrastructure) optimally now and in the future.

In an ever changing health-care environment, a medical laboratory must constantly evaluate and update its processes to sustain a cost-effective model that meets current and future healthcare challenges and demands.
An organization, whose culture promotes continuous Process Excellence, will stay proactive rather than reactive to change.

Calgary Laboratory Services adopted Lean and Six Sigma as process improvement tools in 2005 due to the rapidly changing environment of healthcare in Alberta and Canada.

Our initial objective was to improve operations through three over-arching goals:

- Improve staff satisfaction.
- Meet or better contractual turnaround time targets.
- Increase productivity.

Our commitment to Lean and Six Sigma has had many positive impacts to efficiency and effectiveness throughout the organization including a significant reduction in the turnaround time for routine testing, consistently meeting turnaround time targets in various areas and improved work environments.

CLS has been asked to provide expertise and Lean consulting to an architectural company shorted listed to construct two hospital laboratories in North America. In addition, the CLS Operational Performance Improvement office coordinated and taught two one-day Lean Sigma training workshops to Alberta Health Services leaders in both Edmonton and Calgary.
New Business

As one of the largest multi-site integrated acute care and community laboratory practices in North America, CLS is uniquely positioned to build on the expertise and strengths of both its hospital and community laboratories. CLS’ mission is to improve health and well-being through laboratory diagnostic excellence, education and research.

Economic, regulatory, and workforce factors shape the dynamics of the medical and diagnostic laboratory industry. They affect a laboratory’s ability to increase funding, compete, manage risk and meet future workforce demands. As such, CLS is pursuing new innovative ways of generating revenue.

Laboratory tests play an important role in medical decisions regarding prevention, diagnosis, and treatment of diseases. It is critical to Alberta patients that better testing methods, procedures and equipment be developed to support clinical decisions. Pressure to reduce health care costs will likely result in increased pressure to diagnose diseases earlier driving the development of new tests, reagents and instruments with greater accuracy and precision.

With financial constraints faced by Alberta Health Services (AHS), it is up to CLS to explore new avenues for generating funds to support these activities and continue enhancing laboratory services in the Province of Alberta.

New opportunities will increase revenue, enhance health care by bringing new tests and equipment to market, and allow CLS to move towards its vision of becoming a world leader in laboratory medicine. Opportunities being pursued are:

1. **Beta Testing**

Beta testing consists of testing a vendor’s product (a device, equipment, reagents or kits) and includes, but is not limited to operational validations, precision and accuracy studies, proof-of-concept studies, and comparing devices to existing CLS methods. For example, CLS has been involved in proof of concept testing of a new specimen collection device.

2. **Consulting Services**

CLS has the knowledge and expertise sought by laboratories throughout the world. CLS has the opportunity to transfer its knowledge and expertise to external parties through consulting services (ex. Lean Six Sigma). Finally, there are a number of unique tests offered by CLS not routinely performed by other laboratories. CLS will market these unique tests to other laboratories. For example, CLS has been asked to provide expertise and Lean consulting to an architectural company short listed to construct two hospital laboratories in North America.
3. Reference Testing

Revenue generated through external opportunities with private sector companies, will benefit CLS by allowing it to use the net revenue generated from new business to internally fund research, training and capital purchases. At no time will CLS’ commitment to clinical services for Albertan’s be compromised in pursuit of additional revenue. Revenue generated by CLS will help CLS reduce its dependence on AHS and Alberta taxpayer funding for these areas.

The interpretation of bone marrow differentials was consolidated at the Foothills Medical Centre Hematology division to support the standardization of work processes and more efficient deployment of staff at Alberta Children’s Hospital.

Consolidation of Bone Marrows from ACH to FMC

Support for New Programs, Services, and Additional Beds Within the Calgary Zone

• Increased workload as a result of the expansion of Rockyview General Hospital Emergency in the south Tower.
• The introduction of a 12 bed Medical Assessment unit - the first of its kind in Alberta.
• Surgical Ramp-up at Foothills Medical Centre.
• Expanded diagnostic services within the Cochrane Community Health Centre.
• Increased Surgical Plastics at Peter Lougheed Centre.
• Increased Surgical Urology services at Rockyview General Hospital.

In October 2010, over 52% patients were visiting the PSC via appointments
Mobile Service

Interfaced an Automated Messaging Service with our Cerner Millennium Scheduling module to expand the effectiveness of our phlebotomy services.

Flow Cytometry

Our accredited Flow Cytometry department offers more than 30 validated assays and has most recently been involved in multiple beta testing projects including a protocol for leukemia lymphoma. The department also provided data for the validation and U.S. FDA approval of a technique called “pan leukocyte gating (PLG)” for CD4 analysis. This cost effective flow cytometric method of performing accurate CD4 counts in HIV/Aids patient samples is typically used in resource poor settings around the world.

Cellular Therapy Laboratory (CTL)

This procedure assists the surgeon in locating the correct gland for excision and reduces patient recovery time. Since 2004, it has been available at Foothills Medical Centre (FMC). CLS has expanded this same service to the Peter Lougheed Centre and the Rockyview General Hospital.

Health Centre Testing Laboratories (HCTL)

All HCTLs have standardized processes and equipment. Staff are based at one site but can provide coverage at all sites.

STAT testing requests from the central Patient Service Centres (Gulf and North Hill) have been transferred to the Sheldon M Chumir testing lab to improve Turn Around Time for these requests.

Educational Programs Provided by the Department of Pathology & Laboratory Medicine in Collaboration with CLS

The medical and scientific staff of CLS are responsible for a wide array of educational activities that include: residency training programs in Anatomic Pathology, and Neuropathology, mandatory rotations (e.g. hematopathology) and elective rotations for a number of other residency programs, lectures and small group sessions in a number of undergraduate courses, the Medical Sciences 515/Biology 515 Course, parts of the Bachelor of Health Sciences program, supervision of rotating clinical clerks, training of fellows and graduate students, and Continuing Medical Education events.
Clinical Education Programs Provided by CLS

Medical Laboratory Technologists (MLT)/Medical Laboratory Assistants (MLA), Cytotechnology

CLS maintains its workforce needs by partnering with the educational institutes of SAIT (Southern Alberta Institute of Technology), ABES (Alberta Business and Education Services) and NAIT (Northern Alberta Institute). CLS provides practicum placements for up to 80 Medical Laboratory Assistant (MLA) students, 42 Medical Laboratory Technologist (MLT) students and 2 Cytotechnology students annually.

The clinical programs at ABES and SAIT are enhanced by the new implementation of the CLS laboratory information system in the teaching institutes. The Cerner Millennium training environment is accessible to students in the classroom. Students have the opportunity to learn and practice patient registration and order entry functions prior to their practicum which improves their success and facilitates job readiness.

CLS also supports the use of simulated labs assist with the teaching of MLT students. Preceptors and students agreed these labs were ideal in creating an environment conducive to inquiry and learning in the areas of Microbiology, Urinalysis, Transfusion Medicine and Haematology. Digital cameras, microscopes and network connections to LCD screens all enhance student teaching.
Reducing our environmental impact and being environmentally responsible means demonstrating our commitment to the community we live in and serve, as well as on the larger scale. CLS has successfully adopted an effective Environmental Management System, based on three fundamental “Pillars”; Waste Management, Energy Conservation & Sustainable Procurement. Charged with sustaining these pillars is CLS’ Environmental Health and Safety Department, with essential support of the Environmental Committee (The Green Team). The Green Team has implemented many initiatives corresponding to these pillars including:

- Introducing a pilot plastics recycling program with a goal of at least 75% landfill diversion.
- Assisting employees in having home energy audits conducted.
- Maintaining an internal website that includes: a carpool section; a “Recyclopedia” that provides information on what can be recycled; and other environmental resources.
- Offering opportunities to participate in community activities such as park clean-ups.
- No longer purchasing Styrofoam for beverage use (supplying mugs).
- Inviting internal/external presenters for environmental “Lunch and Learns”.

CLS recognizes the need for preceptor education throughout the organization. SAIT offers continuous registration to an on-line preceptor course which is available to all preceptors within CLS. A 3 part preceptor workshop was offered in 2010 to the MLT preceptors by the CLS Senior Organizational Development Consultant. The topics included coaching and mentoring students and strategies to address learning style differences. Upcoming 2011 educational opportunities for preceptors include the CLS program, “Understanding Yourself as a Leader”.

Clinical Education also supports those individuals in the community that aspire to have a career within a medical diagnostic laboratory. Tours of the Diagnostic Scientific Center (DSC) are offered to prospective students applying to our partnering educational institutes. Many successful graduates have benefited by initially participating in these tours that assisted in their career investigation. Additionally representatives from Clinical Education participated in a career evening for the Youth Possibilities Program (YPP) of the Centre for Newcomers to Calgary.
Sustainability

- Hosting an Environmental Fair, with vendors displaying environmental products and services.
- Maintaining a clothing donation bin onsite for the Cerebral Palsy Association.

On an average weekday the CLS courier department will travel 5200 km or the same distance from Vancouver BC to Fredericton NB.
04 Innovation

The Building Blocks to Laboratory Excellence

CLS will be an innovative organization that leads in planning and influencing the delivery of laboratory services.

CLS’ commitment to innovation remains central to our organization’s success. Recent advances in laboratory medicine in concert with early hospital discharge, facilitate improving health care and outcomes for patients.

While we have moved forward to implement many changes, our researchers have worked with equal determination to ensure Albertans continue to receive leading edge health care.
Almost every family has been touched by cancer and we are grateful to be able to play a role in the fight against this disease, through diagnostic excellence and ongoing research.

Research, which is an integral component of what we do, complements our commitment to patient care. Using advanced technology, our team of medical staff and researchers study diseases that affect people around the world. Research done right here in Calgary has led to innovative ways and methods in diagnosis of diseases like diabetes and breast cancer.

CLS physicians and scientists along with technical and clerical staff throughout the organization, provide services to approximately 700 research projects. Projects involve researchers, both internal and external to CLS, and may include: industry funded clinical trials, grant based research, epidemiology research, and animal studies.

The Haematology department is always exploring new ways to automate the workflow and improve productivity. Currently the CellaVision system, which uses technology for digital image analysis for automation of the manual blood cell differential, is under review.

The Cytology department has evaluated and will be implementing a ‘state-of-the art’ cytological processor, the ThinPrep™ 5000 which supports significant time savings and improved quality assurance.
Transfusion Medicine

Transfusion Medicine evaluated and implemented a new method to wash donor red cell units in a more efficient and cost effective manner. In addition to simplifying preparation and infusion this new method improves the end product to recipients.

The Transfusion Safety Office (TSO) in conjunction with Transfusion Medicine department fully implemented the new Regional Transfusion Services Identification System designed for the Pre-Operative Clinic (PAC) patients. Patients, who are seen by PAC and meet strict requirements, have the opportunity to have their blood specimens collected for a pre transfusion testing up to 31 days prior to their surgery date.

Canadian Blood Services is considering the CLS Blood Utilization Management Plan (BUMP) as a National Model for a prospective Supply and Inventory Optimization System across Canada.

In October 2010, 43% of total appointments were booked on-line and 57% were booked through the Patient Appointment Phone Line.

Flow Cytometry

The Flow Cytometry department was the first Canadian clinical laboratory to interface analyzers with the Millennium Helix laboratory information system for Leukemia and Lymphoma reporting.

Molecular Hematology

CLS Molecular Hematology acquired a state of the art genetic analyzer (ABI 3130) which allows rapid, quantitative analysis, assessing 16 STR (Short Tandem Repeats) markers simultaneously with a 5 color fluorescence technology that has become the gold standard for forensic PCR-based identity testing.
New Neuropathology Cancer Testing

Hematopoietic Stem Cell Transplantation

Pediatric Blood Collections

The neuropathology section has been involved in setting up new cancer testing, i.e. molecular diagnostic testing for genetic mutations in primary brain tumours and in obtaining the pHH3 antibody that is specific for mitotic figures.

Neuropathology is also in the preliminary stages of establishing provincial standards for synoptic reporting related to brain tumours.

- Hematopoietic stem cell transplantation (HSCT) is used as a potential curative treatment for a number of acquired and severe congenital disorders. For example, a patient with acute leukemia receives high dose chemotherapeutic and radiation treatments to destroy all malignant cells in their body (with loss of normal bone marrow cells as well). Stem cells harvested from the bone marrow/peripheral blood of a healthy related or unrelated compatible donor are then infused to reconstitute the patient’s blood system.

- STR-based chimerism analysis on whole blood/marrow specimens from adults and pediatric HSCT (Hematopoietic stem cell transplantation) patients was launched. This technology is used for both sex matched and mismatched donor/recipient pairs. Recent application of this methodology with isolated blood subsets from the Flow Cytometry laboratory allows more detailed analysis of donor cell engraftment, giving clinicians a clearer picture of patient progress after HSCT, and potentially allowing more targeted interventions to improve patient outcomes.

- CLS Cellular Therapy Laboratory acquired funding for an innovative database (StemLab) that allows electronic interactions with the Alberta Blood and Marrow Transplant Program throughout the province. This system will significantly increase efficiency in the laboratory allowing for treatment of more patients.

A trial and implementation of new baby microtainer tubes for infant blood collections was implemented at the PLC. This was initiated to address the issue of clotted Complete Blood Count (CBC) specimens, resulting in the need for an additional CBC order and the neonates requiring a second poke. Study of samples collected in the new BD Microtube realized an improvement in the quality of samples received. Both nursing and technical staff have indicated that they prefer the new tube as it is easier to handle during collections and testing, easier to label and allows for easier storage. The intent is to roll this out to all acute care hospital sites in the near future.
CLS builds and maintains key relationships, internally and externally within the health care systems to not only influence the delivery of laboratory services but to also enhance relationships and trust through effective communication and engagement.
In October of 2010, a corporate blog was introduced at CLS. With the corporate initiative to enhance trust, the necessity to be able to communicate and engage all employees in the company was paramount. The goal was to create an ongoing vehicle to share thoughts and observations as well as offer it in a forum whereby feedback and discussion could take place throughout the organization. Besides encouraging employee participation and a free discussion of issues, successful internal blogs provide a platform for collaboration and will allow all staff to be involved.

Trust is the foundation of all successful relationships, which is one of five pillars of CLS’ overall strategic framework.

We want to ensure all programs; workplace environment, services and proposals are backed by trust, integrity and mutual respect that reinforce the culture and values of our organization. With this in mind, a new strategic initiative, Enhancing Trust, was developed with a mandate to work closely with employees to explore ways of building trust through effective communication.

CLS regularly monitors customer service and satisfaction in order to measure how well we meet the needs of our internal and external customers.

The Customer Service and Satisfaction Quality System Essential gives high-level direction around how CLS will assess internal and external customers’ satisfaction with our services and respond to their feedback.

Under the direction of the CLS Customer Service/Stakeholder Satisfaction Assessment Steering Committee, customer satisfaction is assessed through:

- Surveys
- Customer comment cards
- Focus groups/consultation
- Needs assessment
A CLS Employee Engagement Survey was conducted in November 2010. This was an opportunity for employees to have their voice heard regarding various aspects of their work environment. Results, comments and action plans will be implemented throughout 2011.

In connection with several key initiatives within Human Resources, many learning opportunities were implemented for CLS staff and leaders. These programs have been aligned with the review of the performance management system, the trust initiative and succession planning.

These include:

1. New Employee Orientation – provides employee’s with their first view of CLS and where CLS makes a commitment to learning.

2. Employee learning – Lunch and Learns on topics related to trust, difficult conversations and team dynamics. These align with the competencies in the performance management process.

3. For Front-Line supervisors -- Understanding Yourself as a Leader program “Understanding Yourself as a Leader” is an introductory leadership development program designed to assist in the growth and development of emerging front line leaders. An employee is nominated to be approved to attend the program. The aim of this twelve-part series (one-year commitment) is to build self-awareness and to help the individual understand the expectations of their leadership role. Core leadership concepts such as building and leading teams, encouraging others, communication skills, building trust and knowing oneself are introduced and explored throughout the series. The program currently has 52 employees enrolled - designed to run as two separate cohorts.

Healthcare providers, patients, and staff members provide valuable information that assists CLS in deciding where to focus service/quality improvement efforts.

In June of 2010, a total of 39,388 patient appointments were booked.
4. Supervisor On-boarding – this is a program designed to help new supervisors learn about their new positions and the many areas they interact with.

5. Leadership – program focusing on strategic leadership.

6. Process Excellence Training – as part of the new employee orientation, new employees are required to take a one day Lean 6 Sigma introduction and simulation.
As part of the leadership development program, CLS launched a pilot “Leaders Book Club”. The goal was to provide a structured forum to allow the leaders of CLS to read and learn through leadership literature and engage in discussion focused on their readings. CLS Leaders have since incorporated some teachings from the literature into the workplace. Participants commonly indicated that they most valued the motivation to engage in the readings followed by the group discussions. As a bonus, leadership skills were enhanced by using very little resources. This year, a second book club has been introduced to CLS supervisors. The success of this Book Club has been recognized by the BC Human Resources Management Association. “Read to Lead” A Book Club at Work” was published in the Winter 2010 edition of “People Talk” magazine.

CLS introduced the Student Grant Program in 2009 to support dependents of CLS employees in their pursuit of higher education. The Grant was available to those dependents that are attending a post secondary institution and satisfactorily met all eligibility criteria. Six applicants were randomly drawn from a total of 45 applications qualified for the 2010 Student Grant Program.

The CLS Pandemic coordinators along with the Provincial Laboratory Services Pandemic Working Group, worked collaboratively to finalize all documents during 2010. Local plans continue to be updated.

A CLS process was created following the measles outbreak in Calgary to proactively plan for any similar outbreaks of infectious diseases to ensure the safety of patients and staff.

Alberta Health Services authorized the transfer of Pap tests from the former Chinook and Palliser regions and from the communities of Drumheller, Hanna and Three Hills to CLS.

The project involved cooperative effort between CLS and Alberta Health Services (AHS) and extensive coordination of logistics of sample pick-up from physicians and delivery to Calgary. In addition, history abstracts of past three years of Pap results from Chinook region were made available to facilitate correct management recommendations.

In addition, CLS successfully coordinated training for all physicians in the Palliser region for the collection of Liquid Based Cytology specimens.

A total of 49 routes are used for all sample pick-ups in Calgary, Airdrie and Cochrane. On an average weekday that works out to 900 scheduled and non scheduled pick-ups or about 250,000 per year in total.
### Neuropathology

- In conjunction with Alberta Health Services, the neuropathology section helped draft provincial guidelines and policies for the handling and processing of prion disease specimens, including Creutzfeldt-Jakob disease.

- The section of neuropathology established a professional relationship with the Office of the Chief Medical Examiner in Calgary whereby, CLS acts as consultants in neuropathology to the Medical Examiner on a monthly schedule.

### Anatomic Pathology

Surgical Pathology is collaborating with AHS Information Technology and Tom Baker Cancer Centre (TBCC) to develop a more effective computer interface between CLS and TBCC to expedite the transfer of patient information, pathology reports and special tests.

### Molecular Hematology

The Molecular Hematology department participated in an international standardization project for reporting of BCR-ABL1 transcript levels in Chronic Myelogenous Leukemia patients.

### Flow Cytometry

Flow Cytometry collaborated with other Canadian and American institutions to develop the Consensus Protocol for Paroxysmal Nocturnal Hemoglobinuria testing and reporting.

This department was also responsible for training extra regional Hematopathology Fellow and Residents from Dalhousie University and Iran in 2010.

### Transfusion Medicine (TM)

Dr. Shabani-Rad (TM Medical Director) and the Transfusion Safety Office (TSO) were invited to attend the orientation day for new medical residents. The residents were given an informational package that included a compatibility chart, testing available at each acute care site, information about Consent and Notification of blood products and other educational materials.

In collaboration with Canadian Blood Services, Transfusion Medicine hosted an annual ‘Vein to Vein’ conference. The weekend was well attended with participants throughout Alberta and BC and distinguished speakers from Alberta and the United States.

The CLS-BUMP-Provincial Model (Blood Utilization Management Plan) will be implemented in Saskatchewan by the Health Ministry.
Support for Rural Transfusion Medicine

Transfusion Medicine supports the rural TM sites by providing them with Quick Reference documents as well as advice and troubleshooting support for analyzers and blood inventories.

CLS Quality Department

Quality Department staff worked with internal and external partners to improve and standardize the delivery of laboratory services, including:

- Establishing scheduled meetings between CLS and the Provincial Laboratory of Health to proactively address pre-analytical issues related to specimen collection, data entry and transport.

- Participating as a stakeholder in the development of province-wide policies to standardize sample and requisition acceptance criteria. Adherence to these policies will reduce safety risks when unlabelled/mislabelled specimens or incomplete/inaccurate information on laboratory requisitions are received in the laboratory.
• Providing electronic copies of CLS specialty area requisitions for the Medicine Hat Hospital internal website so nursing staff and physicians there have access to current and legible versions of the requisitions when ordering tests to be transported to CLS for testing.

• Participating in a joint working group with FMC surgical representatives to develop standardized processes for sending surgical specimens to the laboratory in order to prevent specimens from being left on the lift.

Health Centre Testing Laboratories (HCTL)

The Calgary Health Centres are designed to provide an integrated relationship within the site. This is done by sharing common facilities, such as lunch room and meeting rooms, and by participating in site events such as the annual Calgary Lilac Festival. An especially close relationship has gown between the HCTL staff and the Urgent Care staff that fosters resolving issues before they escalate to serious problems. Recently a process was designed to more efficiently handle Cerebrospinal Fluid (CSF) requests that may originate from Urgent Care at Sheldon M Chumir Health Centre.
Appendix

Awards and Recognition for 2010

National & International Presentations
Awards and Recognition for 2010

**Alberta Top 50 Employer**

CLS was named one of Alberta’s Top Employers for 2011 for the third year running. This award is recognition of the hard work and dedication of the people of CLS who have made our organization one of this province’s best places to work. This annual competition recognizes employers that are industry leaders in attracting and retaining employees.

**CLS Wins 2nd Prize**

CLS earned the “Best in Class” Lean Six Sigma Poster Second Place Award at the Process Improvement Institute’s Lab Quality Confab 2010 in San Antonio, Texas on November 2-3, 2010. The poster, “Reducing Length and Variability of Patient Wait Times in Patient Service Centres”, depicts the Lean Six Sigma Black Belt project completed at the CLS Patient Service Centres in 2009.

**ThinkLab 2010 First Place**

CLS took 1st place with the poster, Lean Six Sigma: Sustaining the Gains in a Hospital Laboratory, at the Clinical Laboratory Managers Association ThinkLab annual conference. The presentation was published in the Clinical Leadership and Management Review.

**2010 Smith Distinguished Award**

Dr. Jeffrey T. Joseph is the recipient of the 2010 Smith Distinguished Award for Senior Faculty.

**Best Abstract at the AACC Point of Care Symposium**

Drs. Andrew and Martha Lyon received one of two awards for the best abstract at the AACC (American Association of Clinical Chemists) Point of Care and Critical Testing International Symposium held in Boston, Massachusetts in Sept. 2010.

In addition, Dr. Martha Lyon presented her paper and was honoured as the best speaker for this symposium.

**2010 Anatomic Pathology/Cytology Awards**

Each year, the Division of Anatomic Pathology/Cytology presents two divisional awards: The
Collegiality Award and the Innovation Award.

Cheryl Millman was the recipient of the 2010 Collegiality Award for going the extra mile to help her colleagues and excelling under pressure. She was instrumental in training path assistants, students and residents rotating at RGH.

Jill Shupe received the Innovation Award. Jill has worked tirelessly to ensure all the staff that transferred to the DSC as part of the centralization of Anatomic Pathology felt welcome and appreciated. She has instilled confidence among the team and her strong commitment to the department is to be commended.
Canadian Society of Tissue Typing Conference (CST)

In August 2010, at the Annual Canadian Society of Transplantation Conference held in Vancouver, the Tissue Typing department presented three abstracts and two oral presentations. Carrera Kostur presented an abstract titled Occurrence of HLA Antibodies Pre- and Post-Transplant: The Calgary Experience.

Dr. Faisal Khan presented two research abstracts titled: Nasal Epithelial Cells of Donor Origin after Allogeneic Hematopoietic Cell Transplantation: Correlation with Time Post transplant but at a Faster Rate in the First 3 Months, and Graft Inflammation and Histological Indicators of Kidney Chronic Allograft Failures: Genetic Predisposition to Low Expressing Interleukin-10 Genotypes is Significantly Correlated.

American Society for Histocompatibility & Immunogenetics (ASHI) Conference

In September 2010, at the Annual American Society for Histocompatibility and Immunogenetics (ASHI) held in Miami, the Tissue Typing department presented three abstracts and two oral presentations. This annual conference is one of the most important international events pertaining to the Tissue Typing field of expertise.

Kim Larlee presented an abstract entitled Importance of Renal Transplant Baseline Sensitization in Interpreting Post-Transplant HLA Antibodies: A Case Study with Weak CREG Antibodies.

ASHI Oral Presentations

Case study presented by Luz Stamm: Are HLA Cw Donor Specific Antibodies as Clinically Significant in AMR in Renal Transplantation as are other HLA Antibodies?

Dr. Faisal Khan presented two research presentations entitled: Killer Immunoglobulin Like Receptors (KIR) Incompatibility Between HLA-Matched Allogeneic HCT Donors and Recipients is Associated with Acute Graft Versus Host Disease, and Effect of Killer Cell Immunoglobulin Like Receptor (KIR) and Human Leukocyte Antigen (HLA) Ligand Incompatibility on Human Renal Transplantation: Association with Arterial Thickening and Tubulitis, and 3- Genomic Instability After Allogeneic Hematopoietic Cell Transplantation is Frequent in Oral and Rare in Nasal Mucosa: Is Chronic Graft-vs-Host Disease Responsible?

Anatomic Pathology & Cytology

- Drs. Janette van den Berghe and Birgitte Roland presented a workshop at the Banff Pathology.
- Course 2010 Lymph Node Pathology, entitled “FISH technology and its application to surgical pathology and hematopathology”.
• Dr. TrpKov -- invited speaker at the XXVIII International Congress of the International Academy of Pathology (IAP) in Sao Paulo, Brazil (Slide seminar, Prostate and testis pathology).

• Dr. Yilmaz and Dr. Trpkov were faculty and co-directors of a workshop “Practical approach to diagnostic problems in prostatic and testicular pathology, at the annual meeting of the Canadian Association of Pathologists (CAP), Montreal.

• Dr. Gao-- invited speaker for biannual IAP Thailand academic meeting in Kon Kaen.

• Dr. Kelly- Invited speaker at the following meetings:
  1. Understanding the immunopathology of Hypersensitivity Pneumonitis. Sixth Annual Research Day of the Snyder Institute University of Calgary.
  2. The role of pulmonary structural cells in pulmonary fibrosis in a model of Hypersensitivity Pneumonitis. Eur Respir Society Annual Congress Barcelona.
  3. Invited Round Table Discussion: Acute Severe Asthma. ATS.

• Presentations at Canadian Association of Neuropathologist meeting, 2010

• Dr. Holly Brown: Canadian Ophthalmological Society Annual Meeting & Exhibition- Canadian Society of Oculoplastic & Reconstructive Surgery, Quebec City: “Extranodal natural killer/T-cell lymphoma, nasal-type – presenting as a medial canthal swelling” C. Archibald (presenter), K. Punja, H. Brown

• Dr. Martin Trotter - Invited presentation: “Cutaneous T-cell lymphomas: Clinicopathologic subtypes and diagnostic challenges” - The Banff Pathology Course, Lymph Node Pathology, Banff, AB.

• Dr. Bruecks: Invited presentation: “Tumors of Cutaneous Appendages” to the Eighth Meeting of The Association of Directors of Pathology of China, Shanghai.

• Dr. Ranjit Waghray - invited speaker at the meeting of the Association of Directors of Pathology of China, in Shanghai:
  1. Liquid-based Cytology implementation in a large Regional Cytology laboratory and,
  2. Lean/Sigma application in a Cytology laboratory.
Flow Cytometry

Joanne Luider – National and International Presentations in Melbourne, Australia, China, Seoul, Singapore, Moncton, Toronto, Banff and Edmonton.

MLA Getaway 2010

- Laine Leithead--Airborne infectious diseases and how CLS plays a significant role in the containment of potentially life threatening outbreaks.
- Dr. Chris Naugler “Lab and Order – Clinical Intent” or “Interpretation of Common Lab Tests”.
- Karen Matthews-- “CSI, Crime Scene Investigations, Cold Case Files”.
Putting the “care” back in health care.