# Table of Contents

Opening messages 2

Executive Summary 3

Summary of Activities 9

Department Summaries
  Anesthesiology 16
  Cardiology 17
  Critical Care 22
  Emergency Medicine 27
  Family Practice 30
  Geriatric Medicine 30
  Hospitalists 32
  Laboratory Medicine & Pathology 34
  Medicine 37
  Medical Imaging 42
  Mental Health & Substance Use 45
  Obstetrics & Gynecology 46
  Pediatrics 47
  Surgery 48
Despite the inaugural clinical audit of Florence Nightingale (Crimea 1854) and Ernest Codman's "end results hospital" (Boston 1911), the concept of improving patient outcomes by analysis of the care actually delivered has been slow in development. In 1966 Donabedian described 3 components of healthcare for study: Structure (where it is done), Process (how it is done) and Outcomes (what happened) and there has been a surging realization that "outcomes of care" can always be improved. There is now world-wide recognition that the "team sport" of healthcare can be improved utilizing the same principles of quality improvement prevalent in any "high performing industry" as described by Deming (1950s). We have a long way to go before healthcare can receive the accolades of "high performing", but this exciting journey begins - come and be part of it. The cornerstone is the Clinical Audit.

Dr Peter Doris MD FRCSC
Chair, HAMAC, Fraser Health

A major part of my role has been encouraging the development of Regional Department Medical Quality Committees (RDMQC) with appropriate terms of reference and reporting to HAMAC twice a year. The Regional Departments have been asked to set up appropriate structures that will enable quality activities to take place in a coordinated and planned approach and ensure medical quality improvement activities are afforded protection under Section 51 of the Evidence Act. Most of the regional departments have set up a RDMQC.

Clinical audit is a fundamental process in the improvement of quality and I am pleased to see the progress Departments have made over the past year. As will be seen later in this report the rigour of the clinical audit process allows us to ask pertinent questions of the care we provide and follow a process to answer those questions. In so doing we have the opportunity to compare current practice with established best practice and, where necessary, change the way we deliver care and to re-evaluate for quality improvement.

Dr Jan Kornder MD FRCPC FACC
PMD for Quality Improvement and Patient Safety, Fraser Health

Most of the traditional systems for performance measurement rely on outcome assessment alone. In 1994 Shortell noted better organizational practices related to a patient-centered culture, strong medical and nursing leadership, effective communication and coordination, and open, collaborative approaches to problem solving and conflict management were important in the quest for quality improvement and better patient outcome. The structure and resource (what you have), patient care processes (how you use it) and patient outcomes (what you achieve) are the critical success factors for better performance. The clinical audit process, as adopted by the Regional Departments of Fraser Health, has focused on these elements of quality improvement. While this report is not an exhaustive review of all quality improvement and clinical audit activity in Fraser Health, it demonstrates effective progress by the Regional Departments in their quest to improve the quality of care we offer our patients.

Dr Andrew Webb MD FRCP MFMLM
VP Medicine, Fraser Health
At the February 22, 2011, meeting of the Board of Directors of the Fraser Health Authority, the Board passed four resolutions related to clinical audit, peer review and quality improvement. Of these resolutions two related directly to clinical audit requesting HAMAC to:

- ensure all regional departments develop a process of clinical audit by peer review that is appropriate to the clinical function of the department and ensures continuing improvement in the quality of medical care in the department.
- ensure all members of the medical staff participate in regular clinical audit of their clinical practice by peer review both within the process developed by regional departments and as required by relevant accreditation processes, with a report of that participation made available to the Board in the quarterly reporting by HAMAC.

In October 2011, HAMAC was provided with a current state assessment report that summarized the medical quality activities of each regional department, and recommendations for furthering the quality agenda. The recommendations made were categorized into those relating to structures to support quality; identifying and implementing clinical audits; morbidity & mortality processes; and establishing effective reporting structures and processes. In January 2012, concerted effort was made by regional departments and HAMAC to implement several of the recommendations.

This report, dated October 2012, provides an update on the implementation of these recommendations and the activities undertaken by regional departments to monitor and improve the medical quality of care provided by their members.

**STRUCTURES to support and protect Medical Quality Improvement activities**

**Health Authority Medical Advisory Committee (HAMAC)**

In an effort to provide more comprehensive and consistent reporting by the Regional Departments to HAMAC on their medical quality activities, a structured report and schedule was adopted by HAMAC at the September 12, 2012 meeting. Regional Departments will report on their medical quality improvement activities two times (2x) per year using the reporting template. The first reports using this new format will commence at the October 2012 HAMAC meeting.

**Goal for coming year:**

- Utilizing the data from the Regional Department reports, HAMAC will be able to provide comprehensive and consistent reports to the Board of Directors on medical quality improvement activities being undertaken by Departments within Fraser Health.
Department and Division Medical Quality Committees

There are currently 30 medical committees that have been established by the Board as standing committees of HAMAC for the purposes of evaluating and improving the safety and quality of patient care.

The following Departments and Divisions have established and convened medical quality committees with approved Terms of Reference.

Anesthesiology – Regional Department Medical Quality Committee

Cardiology - Regional Department Medical Quality Committee
- Cardiac Surgery Quality Subcommittee
- General Cardiology Quality Subcommittee, Abbotsford Regional Hospital
- General Cardiology Quality Subcommittee, Surrey Memorial Hospital
- General Cardiology Quality Subcommittee, Royal Columbian Hospital
- Interventional Cardiology Quality Subcommittee, Royal Columbian Hospital

Critical Care – Regional Department Medical Quality Committee

Emergency Medicine – Regional Department Medical Quality Committee

Geriatric Medicine - Regional Department Medical Quality Committee: Terms of Reference only

Hospitalists - Regional Department Medical Quality Committee: Terms of Reference only

Laboratory Medicine & Pathology - Regional Department Medical Quality Committee

Medicine - Regional Department Medical Quality Committee: Terms of Reference only

Medical Imaging - Regional Department Medical Quality Committee

Mental Health and Substance Use - Regional Department Medical Quality Committee
- Regional Division of Addictions Medical Quality Committee
- Regional Division of Child, Youth and Young Adult (CYYA) Psychiatry Medical Quality Committee
- Regional Division of Geriatric Psychiatry Medical Quality Committee
- Regional Division of Tertiary Psychiatry Medical Quality Committee
- Delta Hospital Mental Health and Substance Use Medical Quality Committee
- Surrey Memorial Hospital Mental Health and Substance Use Medical Quality Committee
- Abbotsford Regional Hospital Mental Health and Substance Use Medical Quality Committee
- Burnaby Hospital Mental Health and Substance Use Medical Quality Committee
- Chilliwack General Hospital Mental Health and Substance Use Medical Quality Committee
• Langley Memorial Hospital Mental Health and Substance Use Medical Quality Committee
• Peace Arch Hospital Mental Health and Substance Use Medical Quality Committee
• Ridge Meadows Hospital Mental Health and Substance Use Medical Quality Committee
• Royal Columbian Hospital Mental Health and Substance Use Medical Quality Committee
• Jim Pattison Outpatient Care and Surgical Centre Mental Health and Substance Use Medical Quality Committee

Surgery - Regional Department Medical Quality Committee

Goals for 2013:

Anesthesiology – Local Department Medical Quality Committees
• Establish an effective reporting system

Family Practice
• Determine committee structure
• Develop Terms of Reference
• Convene first meeting of the Regional Department Medical Quality Committee

Geriatric Medicine
• Convene first meeting of the Regional Department Medical Quality Committee

Hospitalists
• Convene first meeting of the Regional Department Medical Quality Committee

Medicine
• Convene first meeting of the Regional Department Medical Quality Committee

Obstetrics & Gynecology
• Determine committee structure
• Develop Terms of Reference
• Convene first meeting of the Regional Department Medical Quality Committee

Pediatrics
• Determine committee structure
• Develop Terms of Reference
• Convene first meeting of the Regional Department Medical Quality Committee
Surgery
- Inventory each surgical committee within Fraser Health that will include: purpose (Terms of Reference if available); membership; meeting frequency; and reporting relationship. This inventory will be used to organize and sanction committees of the Department of Surgery, and to determine how best to support their activities.
- Establish local medical quality committees.

CLINICAL AUDITS

The following clinical audits have been completed or commenced prior to October 2012:

Department of Cardiology
- Pilot Clinical Audit to determine the degree of concurrence of ECG Reader Interpretations.
- Appropriateness of Interventional Cardiology Procedures
- Handover reporting

Department of Critical Care
- Critical Care Physician Compliance with Rounding Checklist

Department of Hospitalists
- VTE Prophylaxis

Department of Medicine
- Division of Endocrinology: Management of Thyroid Nodules
- Division of Gastroenterology: Lower GI endoscopy reporting
- Division of Infectious Diseases: Appropriateness and Effectiveness of the medical care provided by the Home IV Program to Patients with Diabetic Foot Infection.

Department of Medical Imaging
- BI-RADS category utilization
- Carotid Ultrasound guidelines compliance
- Echocardiography reporting

Department of Surgery
- Unplanned Admission following daycare laparoscopic cholecystectomy
- Benefits of laparoscopic appendectomies in obese patients
- Management of the Open Abdomen with the ABRA® Dynamic Fascial Closure System
Planned clinical audits for 2013

The following clinical audits will be commencing or continuing into 2013.

Department of Cardiology
- Appropriateness of Interventional Cardiology Procedures
- Handover reporting

Department of Cardiology and Department of Medicine, Division of General Internal Medicine
- Collaborative Clinical Audit to determine the degree of concurrence of ECG Reader Interpretations.

Department of Critical Care
- Critical Care Physician Compliance with Rounding Checklist

Department of Geriatric Medicine
- Appropriateness and Effectiveness of the medical care provided at the initial assessment/new consult appointment to outpatients referred with a suspected diagnosis of dementia.

Department of Hospitalists
- Hospitalist Care Processes at admission and discharge

Department of Medicine
- Division of Endocrinology: Management of Thyroid Nodules
- Division of Gastroenterology: Lower GI endoscopy reporting
- Division of Infectious Diseases: Appropriateness and Effectiveness of the medical care provided by the Home IV Program to Patients with Diabetic Foot Infection.
- Division of Nephrology: selection of topic and conducting clinical audit
- Division of Neurology: selection of topic and conducting clinical audit. The quality of EEG and EMG reporting are two topics under consideration.
- Division of Respirology: Hospital based spirometry reporting.
- Division of Respirology: Performance and dictated reporting of bronchoscopy.

Peer Review and Chart Review

The following departments have implemented formal, continuous peer review or chart review programs.

Department of Medical Imaging
- Lower Mainland Interim Radiologist Peer Review

Department of Laboratory Medicine & Pathology
- Anatomic Pathology quality management program
Department of Emergency Medicine

- 72 hour returns
- PSLS reviews
- CLIFF logs

Morbidity & Mortality Review

Most departments are participating in M & M review processes at a local site level, or at a divisional level. Appropriate reporting and follow-up of recommendations remains an area for improvement.

Goals for 2013:
The Departments of Critical Care, Surgery, Hospitalists and Anesthesiology have all identified improvements to M & M review processes as an area of focus.

- Develop and document processes for conducting M & M review, inclusive of using trigger tools and/or case selection criteria.
- Develop reporting templates to ensure appropriate reporting is occurring.
- Increase member participation in M & M review activities.

Performance Review/Clinical Performance Appraisal

The Department of Mental Health and Substance Use is developing a performance review tool for clinical psychiatrists. The purpose of the tool is to provide a structured format to guide the discussions between department/division/site leaders and individual members of the department. Consultative discussions at each site were conducted to obtain feedback from department members on the development of this tool. Use of the CANMEDS and components of the psychiatry residency FITER are being considered to form a framework from which the tool would be developed. It is anticipated that the tool will be complete by Fall with implementation of the tool taking place in 2013.
Background
At the February 22, 2011, meeting of the Board of Directors of the Fraser Health Authority, the Board passed four resolutions related to clinical audit, peer review and quality improvement. Of these resolutions two related directly to clinical audit requesting HAMAC to:

- ensure that all regional departments develop a process of clinical audit by peer review that is appropriate to the clinical function of the department and ensures continuing improvement in the quality of medical care in the department.
- ensure all members of the medical staff participate in regular clinical audit of their clinical practice by peer review both within the process developed by regional departments and as required by relevant accreditation processes, with a report of that participation made available to the Board in the quarterly reporting by HAMAC.

In October 2011, HAMAC was provided with a current state assessment report that summarized the medical quality activities of each regional department, and recommendations for furthering the quality agenda. The recommendations made were categorized into those relating to structures to support quality; identifying and implementing clinical audits; morbidity & mortality processes; and establishing effective reporting structures and processes. In January 2012, concerted effort was made by regional departments and HAMAC to implement several of the recommendations.

This report, dated October 2012, will provide an update on the implementation of these recommendations and the activities undertaken by regional departments to monitor and improve the medical quality of care provided by their members.

Structures to support and enable medical quality improvement

1. Medical quality improvement framework
Although not formally adopted by HAMAC, the framework (Figure 1) utilized in the current state assessment has served as an effective tool to guide discussions about medical quality improvement and to categorize activities undertaken. In summary, medical quality improvement activities focus on improving the medical management of the patient by answering key questions:

- Do we know what the right things are to provide clinically effective care?
- Are we doing the right things right?
- Do we know what patients’ experiences have been with the medical aspects of their care?
- Do we know what adversely affects patients?
- Is the medical staff currently competent and supported through professional development?
- How do we know?
Figure 1  Medical Quality Improvement Framework

Knowing and acting on what’s right – current best known practice

Using evidence-based practice. Searching for and critically appraising evidence

- Clinical practice guidelines
- Protocols
- Checklists
- Pre-printed orders

Being supported to do the right things right in the work environment – proper systems and support

Redesigning systems and practices for quality and safety

Knowing and acting on how to do things right – proper techniques and procedures

Appraising clinical performance. Supporting professional development.

- Case-based discussion
- Direct observation of practice
- 360° Assessment
- Clinical audit

Knowing if you’re doing the right things right and acting if you aren’t

Using quality improvement and clinical audit

- Chart/case Review
- Image/slides review
- Audits of CPG/PPO/protocol use and outcomes

Knowing and acting on patients’ and service users’ experiences

Involving patients and service users to improve services. Learning from feedback and complaints

- Patient satisfaction with clinical care
- Complaints from peers & health professionals
- Complaints from patients

Managing clinical risk. Investigating and learning from adverse events.

- Morbidity & Mortality Review Rounds
- Patient Safety Learning System (PSLS) Medical Management Reviews
- Trigger tools

Information on Quality and Safety to support Accountability

Likely a Program Management Responsibility

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1 Figure 1 adapted from “Clinical Governance Manual”. Healthcare Quality Quest, UK, 2008
2. Setting foundations – Establishing Quality Committees

During the last year, the medical staff organization within Fraser Health has undergone change. For some this change has been the formation of new departments; for others, the appointment of new Regional Department or Division Heads; and for others still, the convening of their members to inaugural department and/or division meetings. The Department and Division structures are the venue for engaging peers in discussion, and the foundation upon which medical quality improvement programs can be established.

A significant undertaking for the regional departments has been determining quality committee structures that will enable quality activities to take place in a coordinated and planned approach, and to also ensure medical quality improvement activities are afforded protection under Section 51 of the Evidence Act.

12 of the 14 regional departments have established a Regional Department Medical Quality Committee (RDMQC). Appointed by the Board on the recommendation of HAMAC, these standing medical committees are responsible for:

- evaluating, controlling and reporting on clinical practice in order to maintain and improve the safety and quality of patient care;
- appraisal and control of quality of patient care;
- professional practice evaluation and structured quality improvement of the care provided to patients by its members. This includes reviewing:
  - patient clinical outcomes
  - adverse clinical events arising from patient care
  - morbidity and mortality
  - mechanisms of care provision
- providing advice to HAMAC with respect to patient care;
- providing advice to Regional Department Heads and/or HAMAC with respect to the education of the Medical Staff and other health care professionals.

In addition to the RDMQC, some departments that have multiple divisions have established Regional Division Medical Quality Committees, and others have established medical quality committees at a site (local) level. This approach allows peers of sub-specialties within a division to have focused quality discussions and also aligns existing committees functioning at a local site level with regional department structures.

There are currently 30 department associated medical quality committees within Fraser Health.

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2 Regional Department Medical Quality Committee Terms of Reference
3. Building Awareness and Engagement – Informing Physicians about Medical Quality Improvement

For medical quality improvement to be successful physicians must believe in the benefits of engaging in the activity; have trust that the outcome will be used for improvement of medical practice and patient care; and be involved in selecting the activity to ensure that it is relevant and has value to them.

Commencing in April 2012, invited presentations were provided to Departments and Divisions for the purpose of:

- providing information about the medical quality improvement framework and each component within the framework
- providing specific information about the clinical audit process
- engaging physicians in the medical quality improvement discussion
- identifying a medical quality improvement activity to undertake in the coming year

Similar information has also been provided in one-on-one conversations with department and division heads, and heads of department (local).

4. Reporting – Communicating Achievements

In order to assist regional departments with reporting their medical quality initiatives to HAMAC, and HAMAC in turn reporting to the Board, a regional department medical quality reporting template and schedule (Figure 2) was adopted at the September 2012 HAMAC meeting.

In developing the reporting template and schedule the following were considered/addressed.

- Under the Rules, Regional Departments are required to report on their quality activities to HAMAC. HAMAC must also report to the Board on the quality activities of the Departments.
- The contents of the report must be a comprehensive, concise summary to meet the requirements of Section 51 of the Evidence Act. The contents should also facilitate discussion and learning at HAMAC.
- The report template must be flexible and able to record all of the various types of medical quality activities that are taking place within the Departments.
- The reporting should be frequent, yet provide enough time between reports for quality activities to be implemented. The frequency of reporting was set at twice (2x) a year.
Clinical Audit – Defining, Identifying and Implementing

Clinical audit is a quality improvement process that seeks to improve patient care and outcomes through systematic review of care against explicit standards/criteria and the implementation of changes in practice if needed. Clinical audit has 3 key elements:

- Measurement – measuring a specific element of clinical practice
- Comparison – comparing results with the recognized standard/criteria
- Evaluation – reflecting on the outcome of the audit and where indicated, changing practice accordingly

By conducting a clinical audit current clinical practice can be measured and compared objectively with established good practice, and if necessary, enable actions to be taken to improve care provision.

As part of a comprehensive medical quality improvement program, clinical audit can:

- provide evidence of current practice against regional department/provincial/national/international guidelines or standards;
- assess how closely local practice resembles recommended practice;
- establish if you are actually doing what you think you are doing;
- reinforce the implementation of evidence-based practice; and,
- influence improvements to individual patient care.

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3 Adapted from National Institute for Clinical Excellence. Principles for Best Practice in Clinical Audit. Radcliffe Press, Abingdon, 2002
Clinical audit has a defined methodology that consists of eight (8) steps as illustrated in Figure 3.

**Figure 3 – The Clinical Audit Process**

The first two steps in the clinical audit process set the direction for all subsequent steps and activities. In identifying the topic and defining the audit objectives, it is crucial that the topic has value and relevance to the department/division members, and that the objectives focus on improving the medical quality of care.

Departments and divisions have started to engage in the discussion about clinical audit – what it is, why it is important, and identifying topics of interest. For those departments that have multiple divisions such as Medicine, clinical audits have been identified and implemented at a division level. Once the topic has been selected by the department/division, a physician champion or steering committee has been established to continue the work of designing and implementing the audit. An update on clinical audit activities of each regional department/division is provided in the Department Summaries section of this report.

**Morbidity and Mortality Review – Policy, Procedures and Process**

Morbidity and Mortality Review (M & M) is a well-established quality improvement process that answers the question “How could we have prevented this?” by reviewing patient cases and generating discussion. With this process, patient cases are selected for review using established “trigger tools” or screening criteria. The process for reviewing the patient case will vary but typically will involve presentation of the patient case to a group of peers who will discuss the
case and generate recommendations to prevent recurrence. Provided the process of review is conducted in a supportive collegial environment, significant learning and improvements to patient care can result.

Citing that M & M review is a well-known concept to physicians, a few departments have selected this as the initial medical quality improvement activity to pursue. Establishing appropriate case selection tools, documenting the process for conducting the review, and identifying how learnings and recommendations will be communicated have been the focus of activity.

Most M & M review is taking place at a local hospital level and appropriate medical quality committees are being established to ensure these activities are conducted in accordance with the requirements of Section 51 of the Evidence Act. This will be a continuing area of focus over the coming year.

A reporting template has also been developed to facilitate reporting by the committees to HAMAC and the Board.
Anesthesiology

Regional Department Medical Quality Committee Activities

Meeting Dates: April 19, 2011; September 19, 2011; October 17, 2011; January 16, 2012; February 20, 2012; April 17, 2012; May 22, 2012; June 18, 2012; September 17, 2012

Morbidity & Mortality Review

Local Department of Anesthesia quality committees have been charged with conducting, at a minimum, biannual morbidity and mortality rounds of cases that present within their own institution. A goal for the coming year will be to establish regular M & M review rounds at each site.

Medical Management Review

The Department has developed a Medical Management Review and Follow-up report template for use when conducting medical management reviews.

Evidence Based Practice/Medical Management Tools

Considerable effort by the Department has been involved in the development, review and/or implementation of the following clinical practice guidelines and pre-printed order sets:

- Obstructive sleep apnea protocol
- ASA NPO guidelines
- Obstetric post C-section orders
- Procedural Sedation and Analgesia
- Epidural Anesthesia for Adult Surgical and Trauma Patients
- Postpartum spinal/epidural narcotic anesthesia
- Regional VTE orders – Surgery: Adult patients only

Performance Review/Clinical Performance Appraisal

A draft tool was developed and piloted at Peach Arch Hospital. The purpose of the tool was to provide a means to give feedback to members of the department in a structured format.
Cardiology

Medical Quality Committee Activities
The Department of Cardiology has established a Regional Department Medical Quality Committee with five permanent subcommittees. The subcommittees are structured to encompass both division focused activities and hospital site locations as follows:

- Cardiac Surgery Quality Subcommittee
- General Cardiology Quality Subcommittee, Abbotsford Regional Hospital and Cancer Centre
- General Cardiology Quality Subcommittee, Surrey Memorial Hospital
- General Cardiology Quality Subcommittee, Royal Columbian Hospital
- Interventional Cardiology Quality Subcommittee, Royal Columbian Hospital

Clinical Audits

1. Title: Pilot Clinical Audit to determine the degree of concurrence of ECG Reader Interpretations.

Division: General Cardiology

Phase:
- Planning
- Designing
- Data Collection
- Analysis
- Reporting

Background: Several sites within Fraser Health utilize MUSE for conducting ECGs. With the MUSE system a preliminary electronic interpretation is provided to the physician ECG reader who reviews the data and determines if the electronic interpretation requires amendment prior to finalizing the interpretation. There are approximately 84 ECG readers within Fraser Health that comprise both cardiologists and internists. A pilot clinical audit was undertaken to determine the appropriateness of the ECG readers finalized interpretations.

Objectives:
- Conduct a pilot clinical audit, to determine the degree of concurrence of ECG readers’ interpretations.
- Share the results of the pilot clinical audit with all ECG readers within Fraser Health to determine if there is value in conducting a full clinical audit for the purposes of improving patient care.

Patient Selection: 14 adult ECGs were randomly selected for each of 53 ECG readers. Pediatric ECGs were excluded.

Time period: Data for the clinical audit was collected October – December 2011.

Data collection strategy: This was a retrospective audit of 740 ECGs interpreted and reported by 53 cardiologists and internists within Fraser Health using the MUSE system.
The Cardiology Diagnostics support personnel were instructed to pull 14 ECGs randomly for every physician who reads on MUSE. The ECGs were de-identified with patient name, site, and name of reading physician removed and coded. The clinical audit reviewers were blinded to the patient, site and interpreting physician name. Upon review of the ECGs and the interpretation, the clinical audit reviewer classified each ECG into one of three groups:

Group 1: No discrepancy or minor discrepancy that is not clinically significant
Group 2: Moderate discrepancy that does not directly affect patient care but probably should have been reported (i.e. LVH, long QT, Atrial flutter instead of fibrillation, etc.)
Group 3: Significant discrepancy that might affect patient care directly and should have been reported (i.e. missed STEMI, missed paced rhythm, calling HR 30 as Normal ECG etc.)

All ECGs classified as having moderate or significant discrepancies were reviewed in a blinded fashion by at least 3 further reviewers. Any difference of opinion resulted in the ECG reclassified as Group 1 “no discrepancy”.

Results:

There is an 87.3% concurrence among ECG readers participating in this clinical audit within Fraser Health.

Of the 740 ECGs randomly selected, 7 were pediatric ECGs and were excluded from the clinical audit leaving 733 ECGs reviewed. Of the 733 ECGs:

- 640 (87.3%) were classified as having no discrepancy or minor discrepancy
- 74 (10%) were classified as having moderate discrepancy
- 19 (2.7%) were classified as having significant discrepancy
The results of this pilot clinical audit indicate that there is merit in conducting a full clinical audit that is inclusive of all ECG readers within Fraser Health.

Actions:
A meeting is planned for October 4, 2012 of all ECG readers within Fraser Health. The results from the pilot clinical audit and a recommendation for implementing a full clinical audit will be presented.

Physician participation rate: It is estimated that 100% of ECG readers from the Department of Cardiology and Department of Medicine using MUSE participated in this clinical audit.

2. Title: Appropriateness of Interventional Cardiology Procedures

Division: Interventional Cardiology, Royal Columbian Hospital

Phase:
☐ Planning  ☑ Designing  ☐ Data Collection  ☐ Analysis  ☐ Reporting

Background: On a quarterly basis the RCH Interventional Cardiology Quality Subcommittee undertakes case reviews to ensure that the best possible care and outcomes are delivered to cardiac patients and to ensure the adherence to clinical practice guidelines for patients who undergo procedures in RCH cardiac catheterization laboratories.

Objectives:
The specific objectives for the case review include:
- to evaluate the appropriateness of the diagnostic procedure;
- to evaluate the appropriateness of the interventional procedure;
• to evaluate the procedural outcome of the interventional procedure; and,
• to review the adequacy of documentation of the interventional procedure.

Patient Selection: Patients who underwent an interventional procedure in the Cardiac Catheterization Laboratory at Royal Columbian Hospital.

Time period: Data has been collected for the past 6 meetings and is currently being analyzed.

Data collection strategy:
On a quarterly basis 2 cases are randomly selected for each intervention cardiologist to present at the RCH Interventional Cardiology Quality Subcommittee meeting. For each case, members of the committee complete an evaluation form and score their agreement with the appropriateness of the diagnostic procedure and subsequent interventional procedure according to the practice guidelines, whether the intended outcome was achieved, and the adequacy of procedural documentation. A scale of 0 (disagreement) to 3 (agreement) is used.

**Morbidity & Mortality Review**

**Surrey Memorial Hospital**
At SMH during the period of Feb 2012, to September 2012, “Interesting Case” (morbidity and mortality) review rounds were conducted for the purposes of evaluating and improving the quality of patient care provided.

June 4 2012, 2 cases were reviewed. Issues revolved around information transfer from physician to physician (not transfer of care specifically).

Learning points and recommendations for improvement arising from the cases reviewed, and the status of implementation are as follows:

<table>
<thead>
<tr>
<th>Learning Point / Recommendation</th>
<th>Status of Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SMH Cardiologist will do their OWN discharge summaries for complex patients admitted more than 10 days.</td>
<td>Implemented</td>
</tr>
<tr>
<td>2. Discharge Summary will be completed promptly as a PRIORITY dictation to facilitate proper hospital to home transition key information transfer.</td>
<td>Implemented</td>
</tr>
<tr>
<td>3. Relook at Intermediate risk chest pain unit.</td>
<td>Starting space discussions at SMH</td>
</tr>
</tbody>
</table>
The next scheduled “Interesting Case” review rounds is October 1, 2012

Evidence Based Practice/Medical Management Tools

N 43 Handover Reporting
An Audit was done on ward N43 at SMH in Feb 2012 showing that physician to physician weekend handover was documented 25% of the time. This was discussed at site based rounds and the cardiologists agreed to write handover notes with specific information including current status, anticipated weekend issues, relevant lab or imaging tests and anticipated treatment plan. The goal was to get physician handover rates above 80% and ideally as high as possible.

The documented handover rate has climbed and maintained around 90%. The audit process will continue to ensure maintenance of this performance.

Supporting Professional Development
Ongoing Education of physicians with research GCP guidelines done quarterly at SMH by SMH CCT Inc
Weekly physician led education rounds at SMH
Monthly Joint Journal club led by RCH
Monthly SMH journal Club
Quarterly Echo Rounds led by SMH
Critical Care

Regional Department Medical Quality Committee Activities

Clinical Audits

Title: Critical Care Physician Compliance with Rounding Checklist

Site: All sites with ICUs (RCH, SMH, ARH, BH, RMH, PAH, LMH, CGH)

Phase:
- [ ] Planning
- [x] Designing
- [ ] Data Collection
- [ ] Analysis
- [ ] Reporting

Background:
Care for the critically ill is complex and attention to detail very important. To ensure all aspects of care are considered on a regular basis, a checklist approach to daily patient rounds is proposed. This is comprised of care processes that have been demonstrated to improve patient outcomes including a daily review of sedation, ventilation plan, medication reconciliation, the need for invasive lines and a clear daily plan. In addition, it includes a review of family updates and barriers to patient transfer from the ICU.

Objectives:
Full compliance with the rounding checklist by all physicians working in the ICU

Patient Selection: All ICU patients (at community hospitals may focus only on ventilated patients)

Time period: Proposed to conduct ongoing audits ... 1-2 months in duration.

Data collection strategy: Prospective collection from rounding checklists

Results: Each process included on the checklist is important to patient care and ensuring they are discussed on rounds will also ensure patients and their families are receiving best care and appropriate treatment, respectively.

Actions: All sites are up and running, piloting their respective rounding checklists. Plan to begin pilot collection of data for audit purpose in November

Physician participation rate: All physicians will participate.
Morbidity & Mortality Review

At the September 2012 Medical Quality Meeting the Committee recognized all 8 sites with ICUs as having their own formal Critical Care Morbidity and Mortality Review Committee chaired by the respective member for their hospital on the Medical Quality Committee. As such, all meetings will meet the criteria for Section 51 protection.

Abbotsford Regional Hospital and Cancer Centre

The Critical Care Department at ARHCC has been developing a process for conducting morbidity and mortality review rounds that will be piloted over the next several months. Patient cases will be selected for review using the following process and criteria.

Patient selection criteria:
- Patient death in unit – expected and unexpected
- Unexpected cardiac arrest
- Unplanned extubation
- Reintubation within 24-48 hours after planned extubation
- Readmission to unit within 48 hours after discharge from unit
- ARDS
- Complications of dialysis

Patients who meet at least one of the above criteria are recorded on the “Department of Critical Care ARH Morbidity and Mortality Identification Sheet” that is kept in an M & M Review binder in a secure location on the unit. Any member of the clinical team may record a patient in the binder. In unit deaths are classified as expected or unexpected, with an expected death defined as having occurred when the goals of the care have been changed to reflect impending patient death. On a quarterly basis, the Abbotsford Regional Hospital Department of Critical Care Morbidity & Mortality Review Committee will appoint a Reviewing Physician to conduct an initial review of the cases identified in the binder with the exception of deaths identified as expected. The Reviewing Physician will review the patients’ charts and prepare notes in preparation for presentation of the cases at the Abbotsford Regional Hospital Department of Critical Care Morbidity & Mortality Review Committee meeting. On a quarterly basis, a meeting of the Abbotsford Regional Hospital Department of Critical Care Morbidity & Mortality Review Committee will be convened. The Reviewing Physician will present each case for the purpose of:
- discussing management decisions
- discussing severity, causality and preventability of the event(s)
- providing a learning opportunity
- identifying opportunities to improve patient safety and quality of care.
In the case discussion, consideration will be given to whether any of the following contributed to the morbidity or mortality:

- Underlying disease
- Treatments and procedures: including iatrogenic events (intrinsic to usual ICU procedures performed in accordance with standards of care) and nosocomial infections
- Human error: including judgment, knowledge and technical skills
- Equipment malfunction: including equipment failure and inadequate equipment
- Work environment: communication problems, failure to provide or enforce policy/protocol, absence of policy/protocol, understaffing, poor task prioritization, inappropriate behaviour or action, lack of supervision, high-stress situation
- Other: including lack of communication/coordination between ICU and other departments, patient’s condition (agitation, confusion), fatigue or burnout of caregivers
- Unidentified and independent of the disease process or ICU procedures

The Department of Critical Care ARH Morbidity & Mortality Meeting Notes template will be used to record any recommendations arising from the review and to classify the event.

**Expected Death Review**

On a yearly basis, 20 in unit patient deaths classified as “expected” will be randomly selected and reviewed by an appointed critical care nurse or physician. The purpose of the review will be to ensure that expected deaths have been classified appropriately. Any cases in which the reviewer does not concur with the classification of “expected” will proceed through the mortality review process.

**Burnaby Hospital**

In July 2012, the Critical Care Department at Burnaby Hospital commenced a morbidity and mortality review process. Patient cases will be selected for review using the following process and criteria.

Patient selection criteria:

- delay in care – medication, surgery, procedure
- delay in patient transfer out for “higher level of care”
- delay in patient transfer out to medical ward
- complication of a procedure
- iatrogenic complications
- family dissatisfaction and/or complaint

Patients who meet at least one of the above criteria are recorded in an M & M Review binder that is kept in a secure location on the unit. Any member of the clinical team may

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record a patient in the binder. Case will be reviewed by an assigned physician and presented at quarterly meetings.

**Royal Columbian Hospital**

At present the Local Department Head is copied on all Death summaries and reviews these monthly. Those that appear to be of concern or interest are selected and the last attending physician is asked to provide a summary at the monthly business meeting for discussion. The group is considering a more formalized process, similar to that adopted by ARH and BH.

**Surrey Memorial Hospital**

At present, SMH conducts regular (monthly except summer) ICU rounds where selected cases are reviewed in a multidisciplinary setting. These rounds have been granted the status of an M&M review by the Critical Care Medical Quality Committee. The group is considering a more formalized process, similar to that adopted by ARH and BH.

**Community Sites - Peach Arch Hospital, Ridge Meadows Hospital, Chilliwack General Hospital and Langley Memorial Hospital**

The Internal Medicine group at each site is planning M&M rounds. The expectation is that these will occur quarterly and that at least one will focus on a Critical Care case (cases). This is still in the discussion phase at most sites with the exception of CGH that has begun this process, completing the first M&M October 1st.

**Evidence Based Practice/Medical Management Tools**

**Rounding Tool/Checklist**

A priority for the Department has been the development and implementation of a “rounding tool/checklist” that will serve as a memory aid to the physician when conducting bedside rounds. The use of this tool will ensure consistent and comprehensive information regarding the patient’s care is reviewed and communicated. Rounding tools have been developed and implemented at all sites in FH. They will form the basis of the initial audit.

**Quality Improvement Initiatives**

1. **Handover Process**

Critically ill patients are complex and transfer of care between physicians requires exchange of appropriate information to ensure care decisions are based on full understanding of patient. Handover needs to occur daily to the physician on call or first call for the night. In addition, at the 3 Tertiary sites and BH with a closed ICU model, there is a weekly handover each Sunday. The processes used at each site are being reviewed locally and shared at the Medical Quality Committee Meetings. At present formal handover occurs reliably at the 3 Tertiary Sites with face-to-face handover, usually in form of bedside rounds on a daily basis late afternoon. Daily handover at BH is done by phone. The community sites have variable practices with RMH.
refining a protected email update but most using a more ad hoc method of contacting the on
call physician about patients they are most concerned about. Ongoing work is underway to try
to ensure consistent handover of information at all sites.

2. Follow-up of Higher Level of Care Transfers
At present Critical Care in Fraser Health is regionalized with published admission, discharge and
transfer criteria for each site. At times, review of patients arriving at higher level of care sites by
receiving sites raise concerns about pre-transfer care. While the PSLS should provide a means to
address these concerns, it is not consistently used and is impersonal and at times slow to
resolve concerns identified. A pilot study is being proposed consisting of a short checklist for
receiving physicians to fill out for all HLOC transfers. A lead CC physician will be responsible for
following up on these and provide a means to provide feedback to the sending sites. This
feedback will include:

1) How the patient is doing at 3 days post-admission. The hope is to provide further
   patient outcome as well.

2) Whether any concerns were raised by the admitting physician
The lead physician will gather information to determine whether concerns were valid or not
and, if so, provide feedback to sending physician and team. All this is to be accomplished in as
positive a manner as possible. Gathering information on all transfers allows the occasional
concern in care identified to be placed in context of all patients transferred, rather than focusing
only on negative aspects of care. The process will also ensure that the sending ICUs and
physicians receive information on their patients’ course in hospital and outcomes.

Supporting Professional Development
Through our Physician Education Lead for Critical Care, Neil McLean the following were
arranged:

1) Prevention and Management of Delirium in the ICU, Dr. Timothy Girard, March 29,
   2012, Hart House, Burnaby

2) CRRT Update 2012: Clinically based presentation, Dr. Noel Gibney, October 4, 2012,
   Coza Tuscan Grill, Langley
In addition, access was arranged for all members for VGH monthly Critical Care Rounds. This
can be attended in person, via video link at some sites and viewed over Web after talk.
Emergency Medicine

Regional Department Medical Quality Committee Activities
The Department of Emergency Medicine has established a Regional Department Medical Quality Committee.

Clinical Audits

During the period of January 2012 to May 2012 chart reviews were conducted for the purposes of evaluating and improving the quality of patient care provided.

72 Hour Returns:
58 patient cases were selected for review.

Learning points and recommendations for improvement arising from the cases reviewed are as follows:
- U/S should be done within 24 hours
- Better ERP documentation
- consideration of head injury in behaviour disturbances that escalate with increasing visits
- consider immediate Imaging in elderly patients
- further investigation to r/o PE if abnormal ECG and CXR
- same day CT Heads if considering presence of aneurysm
- be aware of vague symptoms of MI in elderly, do ECH
- avoid ciprofloxacin in complicated UTIs
- do not d/c patient with abnormal vitals
- be aware of atypical presentation of SAH
- ECG for chest pain patient with viral symptoms
- possible early admission for asthmatic patient with unstable vitals and pneumonia
- caution with Geriatric population who can develop sepsis quickly
- CT head for all patients who fall and present with headache
- CT head for all elderly patients who present after a fall
- BP for all pediatric patients

PSLS Reviews:
29 patient cases were reviewed.

Learning points and recommendations for improvement arising from the cases reviewed are as follows:
- review of lisfranc injury and appropriate d/c instructions to patient
- immediate CT if clinically suspicious of PE
- mock pediatric codes through FH, protocols readily available, standardize indications for accessing RT, ensure process for stocking RT and Broslow carts
- frequent serum electrolyte reassessments for hypokalemia
patients remaining in ER Seclusion Room > 24 hours should be seen regularly by MRP and placed on BC Bedline for appropriate placement

**CLIFF Logs:**
17 patient cases were reviewed.

Learning points and recommendations for improvement arising from the cases reviewed are as follows:
- Validate patient's pain complaint - meet comfort needs
- Education re procedural sedation options for children
- improve PR, increase flow through ED
- share complaint with staff so they are aware of impact
- careful of miscommunication with patients and families
- consider DI for post op patient with unusual pain
- 24/7 U/S and surgery reinstated at DH
- medication reconciliation - ID patient's first and last name

**Morbidity & Mortality Review:**
64 patient cases were reviewed.

Learning points and recommendations for improvement arising from the cases reviewed are as follows:
- frequent serum electrolyte reassessments for hypokalemia
- ICU consult for severe electrolyte abnormalities
- head injury on warfarin should have INR and CT Scan
- Cardiovascular compromise can be very subtle in very young children
- consideration of reversible causes of PEA
- mock pediatric Codes to develop expertise and experience
- rapid access to pediatric consultation for critically ill children
- review of lisfranc injury and appropriate d/c instructions to patient
- do endoscopy if high evidence suspicion of distal esophageal rupture
- LFTs should be on initial regional Sepsis Order Protocols
- consider meningioma if significant skull remodeling
- consider carotid artery dissection as cause for hemiplegia
- highlight nitropaste concentration on Rx for topical use
- small supply of G lavage tubes in ER
- RBC should use G6PD to make NADPH to guard against oxidative stress
- ERP, not BC Bedline, makes decision for patient transfer
- further investigation to r/o PE if abnormal ECG and CXR
- medication reconciliation - ID patient’s first and last name
- sepsis risk if patient with stone disease/obstruction + urinary tract infection
- verify first and last name for all ER patients where possible
• patients presenting daytime hours have DI studies that day/visit
• further investigation to r/o PE if abnormal ECG and CXR
• be aware of vague symptoms of MI in elderly, do ECH
• avoid ciprofloxacin in complicated UTIs
• do not d/c patient with abnormal vitals
• be aware of atypical presentation of SAH
• ECG for chest pain patient with viral symptoms
• CT head for all elderly patients who present after a fall
• BP for all pediatric patients
• F chaperone for F rectal exam
• CT head for all elderly patients who present after a fall
• pain indicates a problem
• patient to see surgeon if presents recent post op concerns
• contact Poison Control when patient overdoses on unfamiliar medications
• OB assessment over 20 weeks gestation

Patient Safety Review:
1 patient case was reviewed.

Learning points and recommendations for improvement arising from the cases reviewed are as follows:
• contact Poison Control if patient presents with overdose of unfamiliar medication
  review current form and process for medical clearance and consultative process
  (ERP/Psychiatrist)
• review current processes re ordering non-psychiatric meds by Psychiatrists and
determine if guidelines needed
• cohort MHSU patients in the ER
• formal handover between ER and MHSU staff
• develop list of routine duties for EPNs
• review roles and responsibilities of PLN in ER and determine if amendments or
clarification needed
Family Practice

Medical Quality Committee Activities
The Department of Family Practice has been in transition over this past year with a change in regional department leadership and the newly appointed Regional Department Head commencing in late August 2012. A meeting of the Regional and Local department heads is planned for late October 2012 at which time they will discuss establishing a regional department medical quality committee and start to discuss the department quality initiatives to be undertaken.

In the coming year, the initial goals for the department will be:
- engaging members in department activities;
- establishing a regional department medical quality committee;
- providing education to members to increase their awareness and participation in medical quality improvement;
- engaging with overlapping disciplines to achieve confluence in activity where appropriate, and
- identifying a topic for clinical audit that is of relevance and interest to the membership.

Geriatric Medicine

Medical Quality Committee Activities
The Department of Geriatric Medicine became a department within Fraser Health in June 2012. Prior to this, the members were organized as a division within the Department of Medicine. The Department of Geriatric Medicine is in the process of establishing a Regional Department Medical Quality Committee with associated terms of reference. Until such time as the Regional Department Medical Quality Committee is in place, a subgroup of Department members has been meeting to initiate the Department’s first clinical audit.

Clinical Audit

Title: Appropriateness and Effectiveness of the medical care provided at the initial assessment/new consult appointment to outpatients referred with a suspected diagnosis of dementia.

Phase:
- Planning
- Designing
- Data Collection
- Analysis
- Reporting

Objectives:
1. Determine the extent to which the initial assessment is comprehensive and consistent with accepted good practice.
2. Assess the extent to which physicians’ practices for patient support and safety are consistent with recommended practice.
3. Determine the % of patients with a new diagnosis of dementia that are prescribed cholinesterase inhibitors at the initial assessment or at a subsequent follow-up appointment.
Patient Selection:
The patient population for this clinical audit is adult out-patients that received a first diagnostic workup by a dementia specialist (geriatrician) between January and September, 2012, and have been started on a cholinesterase inhibitor [donepezil (Aricept), galantamine (Reminyl), or rivastigmine (Exelon)].

Time period: Data collection will commence in October 2012.

Data collection strategy:
This will be a retrospective audit of Geriatric Medicine physicians’ practices’ in conducting an initial assessment/new consult of patients presenting with suspected dementia to an outpatient clinic. It is estimated that 1500 new dementia cases are referred each year of which it is estimated that 75% are on cholinesterase inhibitors. Currently 5 clinics provide services by 19 geriatricians. Data will be collected through the review of 180 selected charts of patients initially assessed by each member of the Geriatric Medicine Department. Recommendations from the 3rd Canadian Consensus Conference on Diagnosis and Treatment of Dementia form the basis for the clinical audit criteria.
Hospitalists

Committee Activities

Meeting Dates: September 13, 2011; October 4, 2011; November 1, 2011; December 6, 2011; January 10, 2012; March 6, 2012; April 10, 2012; May 1, 2012; June 5, 2012; September 10, 2012

The Department of Hospitalist is currently establishing a Regional Department Medical Quality Committee and associated terms of reference. In the interim, the Hospitalist Chiefs have been meeting regularly with medical quality improvement a standing item on each agenda.

In summer 2012, the Regional Department Head resigned. Recruitment of a new Regional Department Head is ongoing.

Clinical Audit

1. VTE Prophylaxis: The Hospitalists have been auditing the appropriateness of VTE prophylaxis use. Data from these audits was not available for presentation with this report.

2. Title: Hospitalist Care Processes

Phase:

- Planning
- Designing
- Data Collection
- Analysis
- Reporting

Objectives:

1. Assess the extent to which hospitalists’ practices for patient admission are effective and consistent with accepted good practice.
   - determine the extent to which PPOs are used by hospitalists
   - indicate the level of compliance with standards for effective and comprehensive reporting (admission notes)

2. Assess the extent to which hospitalists’ practices for patient discharge are effective and consistent with accepted good practice.
   - determine the extent to which the discharge summary template is used by hospitalists
   - increase the effectiveness of communication between the hospitalists and community (GP) at time of patient discharge

Note: This clinical audit was championed by the previous Regional Department Head and initially discussed at the Chiefs’ meeting. Upon the appointment of the new Regional Department Head, this clinical audit will be brought forward for consideration to the Regional Department Medical Quality Committee. This clinical audit is currently on hold.
Morbidity & Mortality Review
An Inpatient Death Report template has been developed and each site will be establishing a case review group and procedure to conduct the reviews.

Evidence Based Practice/Medical Management Tools
In collaboration with other departments and groups, the Hospitalists have been involved with:
- reviewing COPD pre-printed orders for the region
- developing a Delirium protocol
- developing of a new Discharge and Return to Care form
Laboratory Medicine and Pathology

Regional Department Medical Quality Committee Activities
The Department of Laboratory Medicine and Pathology has established a Regional Department Medical Quality Committee. Meetings of this committee are held jointly with the Program Quality Committee.

At the September 12, 2012 meeting of HAMAC, the Department provided a report on the Anatomic Pathology Division’s quality management activities. This report is provided below.

Laboratory Medicine and Pathology Program
Anatomic Pathology Quality Management Quarterly Report

Date: July 30, 2012

Reporting Period January 1 to March 31, 2012

The Anatomic Pathology service is provided to all of Fraser Health acute care sites through the centralized laboratories (ARHCC, BH, RCH, and SMH) and the support of twenty-nine pathologists. The service covers surgical pathology, intraoperative consultations, cytopathology (fine needle aspiration and exfoliative), molecular cytogenetics and autopsy (hospital and forensic).

The Anatomic Pathology (AP) division has a quality management program that covers multiple technical and medical quality indicators to include: competency of locums and new pathologists, intraoperative consultations review, diagnosis review at analytical and post analytic stages of report generation, pathologist and technical site competency in internal and external immunohistochemistry quality assurance programs, and second review of complex forensic autopsy reports. Collection and review of the data is completed at the site and regional level, with the site technical manager and the AP medical director reviewing data, documenting discrepancies and following up where required. Discrepancies are addressed as they occur and documentation of action taken reported quarterly with the raw data to the regional AP laboratory scientist, who compiles data from the four sites into a single statistical report. The compiled data is reviewed by the regional AP laboratory scientist and regional medical director, trends are noted and outliers are discussed with the site medical director if appropriate. A copy of the full statistical report is presented to the Laboratory Medicine and Pathology Quality Committee.

Locum and New Pathologists
A competency review is completed for locum and new pathologists who are granted privileges to work in FH. A random review of a specified number of cases (dependent on workload completed) are reviewed by the site AP director or designate. Data is collected on report clarity, if reviewing pathologist agrees or disagrees with diagnosis, and if disagreement is classified as minor or major. All major disagreements are further classified as having clinical significance or not. All major disagreements which have significant clinical impact are immediately followed
up, additional testing completed if required and corrected or addendum reports issued and the most responsible physician responsible for patient care notified.

Intraoperative Consultations
Intraoperative consultations (IOC) are the preliminary diagnosis provided through the preparation and interpretation of a frozen section slide at the time of the surgical procedure. As part of the quality assurance procedure all IOC diagnoses are compared to the surgical pathology diagnosis made on the follow up preparation of the permanent tissue slides of the same tissue and any additional tissue removed.

<table>
<thead>
<tr>
<th>Surgical</th>
<th>FHA acceptable discrepancy rate</th>
<th>ARHCC</th>
<th>BH</th>
<th>RCH</th>
<th>SMH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of surgical cases</td>
<td></td>
<td>5313</td>
<td>3184</td>
<td>10296</td>
<td>7123</td>
</tr>
<tr>
<td>Number of IOC cases completed</td>
<td></td>
<td>24</td>
<td>30</td>
<td>103</td>
<td>75</td>
</tr>
<tr>
<td>Number of major disagreements between IOC and final diagnosis</td>
<td></td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Major discrepancy rate</td>
<td></td>
<td>&lt; 2%*</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

*CAP QProbe Arch Pathol Lab Med. 1996;120:804–809

Diagnosis Review
Review of pathology diagnoses /reports are completed and monitored internally and externally. PREVI – pathology review internal: Prospective internal monitoring is completed during the analytical phase of interpretation pathologists will request a consultation from other pathologists who are on site or at another FH site prior to sign out of the final report. PREVO - pathology review external: This can be a prospective or retrospective review. Prospective when sent out for consultation prior to completion of the patient report to a specialty pathologist who is not located with FH and retrospective when the signing pathologist or clinician request a review after the report has been signed out.

<table>
<thead>
<tr>
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<th>BH</th>
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<tr>
<td>Number of cases</td>
<td>Number of cases</td>
<td>% of cases</td>
<td>Number of cases</td>
<td>% of cases</td>
</tr>
<tr>
<td>PREVI Internal review</td>
<td>215</td>
<td>4.0</td>
<td>211</td>
<td>6.6</td>
</tr>
<tr>
<td>PREVO External review</td>
<td>58</td>
<td>1.0</td>
<td>30</td>
<td>0.9</td>
</tr>
<tr>
<td>Number of cases</td>
<td>417</td>
<td>5.6</td>
<td>1</td>
<td>0.01</td>
</tr>
</tbody>
</table>
Consultation with other internal or external pathologists, especially with those who have a sub-specialty ensures that difficult or complex cases are being interpreted by more than one pathologist.

PREVP – pathology review of previous case slides: Retrospective internal review occurs when a FH pathologist reviews slides from a patient’s related previous FH surgical or cytology case. Review of the slides ensures that the previous and current diagnoses correlate.

PREVB – pathology review completed by BCCA pathologist: Many patients who have been referred to BCCA for follow-up treatment will have their FH pathology report and slides reviewed to ensure primary diagnosis is correct.

When as part of the review process a major disagreement is identified (PREVMD), the case is reviewed by multiple FH pathologists and occasionally additional external pathologists to determine which diagnosis is correct, original FH diagnosis or the reviewing pathologist. If clinically relevant a revised report will be issued and the physician most responsible for the care of the patient will be notified (PREVDX).

External and internal QA programs – technical and professional

FH participates in four external quality assurance programs, three of which monitor immunohistochemistry technical procedures. These programs monitor multiple antibodies but are primarily focused on the breast markers ER, PR and Her2. The fourth program has a wider focus and looks at tissue procedures required to produce high quality routine microscopic slides for diagnosis. Results from all programs for all sites are reviewed at the site level and submitted along with a proficiency sign off report to the laboratory scientist and regional medical director for review. Review of recent external quality assurance program data has resulted in FH changing the antibody clone used for estrogen receptor testing. The monoclonal rabbit antibody (SP1) that has shown improved specificity and been adopted by the majority of IHC testing sites across Canada.

Internal QA includes the capture, reporting and review of data related to the total number of breast specimens submitted to pathology, the total number of tumors tested for ER, PR and HER2. Although there are published national guidelines on how breast tissue should collected and processed there are no current benchmarks to which positivity rates can be compared, therefore in FH, the percent positivity of each marker and follow up FISH testing for Her2 is monitored and compared to previous site and region data.

Additional internal competency evaluations are performed on an ad hoc basis. The most recent was a review of breast marker cases conducted with the aid of new digital pathology technology. This allowed all regional pathologists to review the cases in a convenient, timely fashion. These were particularly difficult, possibly controversial cases which showed how this new technology could be utilized for pathologist assessments in the future. These assessments will continue to be used to provide feedback to pathologists on their performance.
Medicine

Medical Quality Committees
The Department of Medicine is currently establishing a Regional Department Medical Quality Committee and associated terms of reference. Additional committees, specific to divisions and hospital locations, will be established in the coming year.

Over the past year, the Department of Medicine has been establishing its divisions. Eight (8) divisions within the Department of Medicine have been meeting regularly with medical quality improvement a standing item on each agenda.

Division of Endocrinology
Meeting Dates: December 5, 2011; March 26, 2012; June 18, 2012; September 24, 2012

Clinical Audit

Title: Management of Thyroid Nodules

Division: Endocrinology

Phase:
- Planning
- Designing
- Data Collection
- Analysis
- Reporting

Background:
The Division of Endocrinology has selected the management of thyroid nodules as the medical quality initiative for clinical audit. The Division is currently creating consensus guidelines for the region with the participation of Medical Imaging, Surgery and Pathology. Once the clinical practice guidelines have been established, an education session will be held within the division. A clinical audit will be undertaken in 2013 to determine the degree of compliance to the use of the clinical practice guidelines for the management of thyroid nodules.

Evidence Based Practice/Medical Management Tools
In addition to the development of clinical practice guidelines for the management of thyroid nodules, the division has also provided suggestions to the Cardiac Catheterization pre-printed orders and the Sliding Scale Insulin protocol and pre-printed orders.
Division of Gastroenterology
Meeting Dates: March 15, 2011; November 29, 2011; August 27, 2012

Clinical Audit

Title: Lower GI endoscopy reporting
Division: Gastroenterology

Phase:
☐ Planning  ☑Designing  ☐ Data Collection  ☐ Analysis  ☐ Reporting

Background:
The Division of Gastroenterology has selected the topic of lower GI endoscopy for clinical audit. The goal of the clinical audit will be to improve patient care by allowing physicians to assess their endoscopy practices in comparison to peers and national standards. The Canadian Association of Gastroenterology consensus guidelines on safety and quality indicators in endoscopy will form the basis for the clinical audit criteria. The clinical audit will be conducted in fall 2012 through spring 2013.

Morbidity & Mortality Review
The Division has discussed commencing divisional M & M review meetings citing the educational value and improvements to patient care that can result. Implementing an M & M review process will be an activity for 2013.

Evidence Based Practice/Medical Management Tools
The Division has standardized the documentation for endoscopic procedures and has developed and implemented a Standard Report for Colonoscopy. This reporting template will ensure that complete and comprehensive information is reported.

Supporting Professional Development

GI Rounds were conducted at the RCH site from 12:00 - 13:00 on the following dates in 2012:
January 16; February 27; March 19; May 28; June 18; September 17; October 15; November 19
Division of General Internal Medicine
Meeting Dates: May 8, 2012; September 10, 2012

Clinical Audit
The Division of General Internal Medicine is in discussion with the Department of Cardiology regarding the undertaking of a collaborative clinical audit that would examine the degree of concurrence of ECG Reader interpretation between all readers, Cardiologists and Internists. A meeting of all ECG Readers will be taking place on October 4, 2012 to discuss the pilot clinical audit undertaken by the Department of Cardiology and plans to implement a similar clinical audit by the Department of Cardiology and Division of General Internal Medicine. If there is agreement to proceed, the clinical audit would be conducted in spring 2013.

Division of Infectious Diseases
Meeting Dates: March 10, 2011; April 28, 2011; October 19, 2011; January 11, 2012; April 11, 2012; June 19, 2012; September 26, 2012

Clinical Audit

Title: Appropriateness and Effectiveness of the medical care provided by the Home IV Program to Patients with Diabetic Foot Infection.

Division: Infectious Diseases

Phase:
☐ Planning  ☑Designing  ☑Data Collection ☐Analysis  ☐Reporting

Objectives:
1. Assess the extent to which Infectious Disease Specialists are providing effective and appropriate care to diabetic patients presenting with foot ulcers as treated through the Home IV Program.
   • Determine the extent to which patients receive a consultation with an infectious disease specialist.
   • Determine if follow-up frequency is consistent with accepted good practice.
   • Determine the extent to which investigations are consistent with accepted good practice.
   • Determine the extent to which antibody selection is culture directed.

2. Assess the extent to which Infectious Disease Specialist practices’ for prescribing antibiotics to diabetic patients presenting with foot ulcers as treated through the Home IV Program are effective and safe.
   • Determine the extent to which antibiotic selection is consistent with accepted good practice.
   • Determine the extent to which antibiotic treatment duration is consistent with accepted good practice.
   • Determine the number and type of patient complications with treatment.
Patient Selection:
The patient population for this clinical audit is diabetic adult patients presenting with foot ulcers or osteomyelitis receiving treatment through the Home IV Program between April 1, 2011 and March 31, 2012 under the care of an Infectious Diseases specialist.

Time period: Data will be collected from August through December 2012.

Data collection strategy:
This will be a retrospective baseline audit of Infectious Disease Specialists’ practices’ in treating diabetic patients presenting with foot ulcers and who were treated through the Home IV Program. Data will be collected through the review of 60 selected charts of patients treated by each member of the Infectious Diseases Division.

Division of Nephrology

Clinical Audit
The Division of Nephrology has received information and education on conducting clinical audits, and how this quality improvement tool can assist with improving patient care and outcomes. The Division members are considering the selection of a topic for clinical audit.

Division of Neurology
Meeting Dates: October 14, 2011; July 12, 2012; September 20, 2012

Clinical Audit
The Division of Neurology members are considering the selection of a topic for clinical audit. The quality of EEG and EMG reporting are two topics under consideration.

Division of Oncology
Meeting Dates: April 17, 2012; August 21, 2012

Supporting Professional Development
The Division of Oncology holds monthly education rounds. Examples of topics include:

April 3, 2012
Topic: Late Relapses in Hodgkin’s Lymphoma
Objectives:
- To review clinical presentation, staging and subtypes of Hodgkin’s Lymphoma
- To review prognostic factors and management of relapsed and refractory Hodgkin’s disease
- To examine the characteristics of very late relapses of Hodgkin’s Lymphoma based on the BCCA lymphoma database
May 1, 2012

**Topic:** Breath Control Techniques: Improving the Accuracy of Radiotherapy

**Objectives:**
- Discuss the importance of breath control during radiotherapy
- Review physiologic mechanism of breathing
- Explore various methods of breath control

**Division of Respirology**
Meeting Dates: October 2011; January 24, 2012; April 24, 2012; September 18, 2012

**Clinical Audit**
The Division of Respirology has identified two topics for clinical audit. The first will focus on hospital based spirometry reporting. The second will focus on the performance and dictated reporting of bronchoscopy, incorporating "procedural pause" and other elements of good practice. These two audits will be conducted in 2013.

**Supporting Professional Development**
The Division of Respirology holds weekly education rounds at RCH that can be broadcast to local hospital sites.
Medical Imaging

Regional Department Medical Quality Committee Activities
Meeting Dates: February 20, 2012; March 12, 2012; April 16, 2012; May 14, 2012

Clinical Audit

1. Title: BIRADS category utilization

A clinical audit on BIRADS category utilization in breast imaging reports resulted in the RDMQC recommending that the Regional Department of Medical Imaging adopt a BIRADS category use policy. The Department has accepted this recommendation with the condition that the BIRADS category is used when reporting breast imaging, “when possible”.

2. Title: Carotid Ultrasound

A clinical audit on carotid ultrasound guideline compliance was conducted. The RDMQC referred the issue of standardizing carotid ultrasound reports to the Lower Mainland Medical Imaging Physician Advisory Council in an effort to promote a single Lower Mainland standard.

3. Title: Echocardiography reporting

A follow-up clinical audit on echocardiography report content and the effect of a scorecard methodology for reporting audit results in individual members of the Department. Improved performance in every category, for every physician was noted. The RDMQC recommended to the Regional Department of Medical Imaging that:

a.) ASE guidelines be adopted as a Department standard in the following areas:
   - Diastolic function assessment
   - 2D chamber quantification
   - Classification of valvular stenosis
   - Classification of valvular regurgitation
   - 17 segment nomenclature

b.) the Regional Department develop a standard format echocardiography report for use by all Department physicians.

The Department of Medical Imaging has accepted these recommendations.

The Provincial Heart Failure working group has distributed a detailed standard for echo report content and is receiving feedback from physicians across the province on echo report content and methodology.

Once a provincial standard is adopted this will be presented for adoption to the Regional Department of Medical Imaging.
4. Title: Lung Biopsy Yield Rates and Types across sites

A clinical audit on lung biopsy yield rates was performed and presented to RDMQC. The audit will be repeated with a modified methodology. Benchmarks for diagnostic yield will be established. A pathway for proceeding with FNA vs core biopsy will be defined.

Peer Review

Title: Lower Mainland Interim Radiologist Peer Review

Background:
The Department of Medical Imaging members have been actively participating in the Lower Mainland Interim Radiologist Peer Review Process. This retrospective peer review process is being implemented at all Lower Mainland medical imaging sites.

Case selection:
For radiologists who hold full category licensure with the CPSBC, 2% of the previous week’s reported CTs are reviewed by peer radiologists. For radiologists who hold provisional category licensure with the CPSBC, 5% of the previous week’s reported cases, for all modalities, are reviewed.

Methodology:
Selected cases are sent to peer radiologists to review at their convenience within a 7 day timeframe. In reviewing the case the peer radiologist will record their opinion on the degree of concurrence with the interpretation and the clinical significance. A modified RadPeer scoring system is used to record the opinion. Any discrepancy in opinion requires a comment from the peer reviewer.

<table>
<thead>
<tr>
<th>Score</th>
<th>Interpretation</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Concur with interpretation</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Discrepancy in interpretation/ not ordinarily expected to be made (understandable miss)</td>
<td>A - not clinically significant</td>
</tr>
<tr>
<td>3</td>
<td>Discrepancy in interpretation/should be made most of the time</td>
<td>B – clinically significant</td>
</tr>
<tr>
<td>4</td>
<td>Discrepancy in interpretation/ should be made almost every time – misinterpretation of findings</td>
<td></td>
</tr>
</tbody>
</table>
Communicating results:

1. All results of the case reviews are communicated to the original reporting radiologist via letter to provide feedback and to enable continuous improvement. Names of the peer reviewers are anonymized from this letter. The Regional Department Head is notified by automatic e-mail of Category 4 scores or clinically significant cases to ensure any patient follow-up that may be required takes place.

2. In September 2012, Fraser Health distributed individualized letters to each radiologist that summarized information regarding their participation in peer review as a reviewer, and the participation of reviewers as a whole. Participation rates are very high at 89%.

Outcomes and Improvements to Patient Care:
The system is seen to be improving patient care in several ways:

- Discrepancies are being identified, and those thought to be clinically significant, are generating follow up actions.
- Radiologists are providing each other with positive feedback and having conversations about quality.
- A participation rate of 89% has been achieved to date. Radiologists appear to trust the process and have a shared commitment to support each other as colleagues and to enhance the quality of care provided.
- Reviewers and reviewees are receiving specific feedback on performance.
Mental Health and Substance Use

Medical Quality Committee Activities
The Department of Mental Health and Substance Use has established a Regional Department Medical Quality Committee with fourteen permanent subcommittees. The subcommittees are structured to encompass both division focused activities and hospital site locations as follows:

Divisional medical quality committees:
- Regional Division of Addictions Medical Quality Committee
- Regional Division of Child, Youth and Young Adult (CYYA) Psychiatry Medical Quality Committee
- Regional Division of Geriatric Psychiatry Medical Quality Committee
- Regional Division of Tertiary Psychiatry Medical Quality Committee

Local medical quality committees:
- Delta Hospital Mental Health and Substance Use Medical Quality Committee
- Surrey Memorial Hospital Mental Health and Substance Use Medical Quality Committee
- Abbotsford Regional Hospital Mental Health and Substance Use Medical Quality Committee
- Burnaby Hospital Mental Health and Substance Use Medical Quality Committee
- Chilliwack General Hospital Mental Health and Substance Use Medical Quality Committee
- Langley Memorial Hospital Mental Health and Substance Use Medical Quality Committee
- Peace Arch Hospital Mental Health and Substance Use Medical Quality Committee
- Ridge Meadows Hospital Mental Health and Substance Use Medical Quality Committee
- Royal Columbian Hospital Mental Health and Substance Use Medical Quality Committee
- Jim Pattison Outpatient Care and Surgical Centre Mental Health and Substance Use Medical Quality Committee

Performance Review/Clinical Performance Appraisal
The Department of Mental Health and Addictions is developing a performance review tool for clinical psychiatrists. The purpose of the tool is to provide a structured format to guide the discussions between department/division/site leaders and individual members of the department. Consultative discussions at each site were conducted to obtain feedback from department members on the development of this tool. Use of the CANMEDS and components of the psychiatry residency FITER are being considered to form a framework from which the tool would be developed. It is anticipated that the tool will be complete by Fall with implementation of the tool taking place in 2013.
Obstetrics & Gynecology

The Regional Department of Obstetrics and Gynecology has not yet established a Regional Department Medical Quality Committee. Currently medical quality improvement activities are reported to the MICY Program Quality and Performance Committee. A goal for the coming year will be to determine a committee structure for the department that will be effective and efficient.

Members of the Department of Obstetrics and Gynecology have been involved in numerous quality activities lead by the MICY Program.

Morbidity & Mortality Review

The Perinatal Trigger Tool and PSLS identify cases for M & M review by local multi-disciplinary review committees. Trigger tools are being implemented at all 8 maternity sites and are being modified for pediatrics and NICU. A standardized reporting template has been developed and implemented by the local multi-disciplinary review committees to report M & M activities to the MICY Quality & Performance Committee.

Patient charts are automatically selected for review using trigger tools; as identified by PSLS events; or based upon specific criteria that may include i) Stillbirth or intrauterine death, ii) neonatal pH < 7.0 or base excess > -12, iii) APGAR scores of <4 at 1 min & <6 at 5 min, iv) significant maternal morbidity.

Members of the Department also participate in MoreOB audits.

Medical Management Review

Since May 2010, there have been numerous medical management reviews that were conducted for the purposes of evaluating and improving the medical quality of care provided.

Quality Improvement & Patient Safety files: QIPS
   157 files of which 103 are closed and 54 are open/under review

Patient Safety Reviews:
   60 patient safety reviews (including commissioned PSRs using root cause analysis, administrative reviews and medical management reviews)
   28 - completed patient safety reviews with adopted recommendations (4-6 currently underway and will be proceeding to commissioned safety review)

External Reviews:
   15 external reviews (note: this number may be higher as some external reviews may not have been recorded in the database)

Total recommendations:
414 recommendations have been generated by all review activity excluding those identified through local patient safety reviews.

Evidence Based Practice/Medical Management Tools

Members of the Department have been involved in the development, review and/or implementation of the following clinical practice guidelines and pre-printed order sets:

- PPO for neuroprotection of preemies
- Induction of Labour booking protocol
- Oxytocin protocol and PPO
- Criteria for Operative vaginal delivery by GP/ FP
- Preterm Labour protocol and PPO
- Epidural protocol and PPO
- HIV protocol and PPO
- Removal of Demerol from all maternity units, and standardization of dose/concentration of Vitamin K.
- PPOs for Newborn (term)
- Late preterm post-partum orders
- postpartum/post op/neuraxial order sets
- Severe Hypertension protocol and accompanying orders
- PPROM regional protocol

Quality Improvement Initiatives

Additional quality improvement initiatives include MoreOB, NRP and FHS training, and lines of communication protocol (escalation protocol)

Performance Review/Clinical Performance Appraisal

6 physicians have undergone a performance review.
2 physicians have had modifications to their scope of practice.
2 physicians have had their obstetrical privileges suspended

Supporting Professional Development

Medical staff participate in the MoreOB program.

Pediatrics

The Regional Department of Pediatrics has not yet established a Regional Department Medical Quality Committee. Currently medical quality improvement activities are reported to the MICY Program Quality and Performance Committee. A goal for the coming year will be to determine a committee structure for the department that will be effective and efficient.
Surgery

The Department of Surgery has recently established a Regional Department Medical Quality Committee. Within Fraser Health there are several surgical committees that meet. Most of these committees are site based, and at the larger institutions, these committees are also based upon sub-specialties (divisions). Goals for the coming year include:

- Inventory each surgical committee within Fraser Health that will include: purpose (Terms of Reference if available); membership; meeting frequency; and reporting relationship. This inventory will be used to organize and sanction committees of the Department of Surgery, and to determine how best to support their activities.
- Establish local medical quality committees.
- Establish regular morbidity & mortality review processes at each site.
- Establish reporting templates for use by divisions and local medical quality committees to ensure regular reporting to the Regional Department Medical Quality Committee and HAMAC.

Regional Department Medical Quality Committee Activities
Meeting Dates: June 21, 2012; September 20, 2012

Division Meeting Activities
Several divisions within the Department of Surgery hold meetings at which quality improvement is an item for discussion. Listed below are those Divisions for which meeting dates are known:
- General Surgery: February 20, 2012; June 2012; September 27, 2012
- Ophthalmology: September 24, 2012
- Oral & Maxillofacial Surgery: October 25, 2011; June 12, 2012; September 25, 2012
- Urology: June 5, 2012

Local Site Medical Quality Committee Activities
Listed below are those site medical quality committees for which meeting dates are known:
- Langley Memorial Surgical Audit Committee: March 1, 2012
- Surrey Memorial Hospital Surgical Quality Committee: February 27, 2012
- Chilliwack General Hospital Surgical Audit Committee: May 8, 2012

Clinical Audits

1. **Title:** Unplanned Admission following daycare laparoscopic cholecystectomy

   **Division:** General Surgery    **Principal Investigator:** David E. Konkin, MD, FRCSC, FACS

   **Background:**
   Laparoscopic cholecystectomy is the procedure of choice for patients with symptomatic gallbladder disease. With increased experience and rapid recovery, the postoperative course has improved and this has led to shorter postoperative stays. Since the late 1990s,
daycare laparoscopic cholecystectomy has become the standard. This has led to improved patient satisfaction and minimized the burden on inpatient units in the hospital. There is, however, controversy regarding the optimal discharge criteria and the time required for postoperative observation. In most studies, approximately 15% of patients require unplanned admission to hospital following surgery. This is due to complications of surgery as well as the need for observation due to multiple factors including postoperative bleed, poor pain control, nausea, and urinary retention. Many hospitals have adopted a “time” factor of length of observation needed until the patient can be assessed for discharge based on rationale that by the end of this period, any problems would have declared themselves and are unlikely to occur after this time. However, there is limited data on the minimum time required after the procedure to safely discharge the patient. Identifying the time point in the post-operative course complications or unexpected events occur would aid in the development of a post-laparoscopic cholecystectomy discharge protocol.

Research Questions:
What is the relationship between discharge times and rate of unplanned readmissions?
What patient characteristics affect this relationship?

Research Objectives:
The objectives of this study are to:
1) describe discharge times and patient characteristics following daycare laparoscopic cholecystectomy
2) identify the proportion of patients that have had unplanned readmissions after daycare laparoscopic cholecystectomy, determine the primary reason for readmission, what time post-operatively the decision for readmission was made, and outcomes of the readmission
3) evaluate the relationship between discharge times and rate of unplanned readmissions and patient characteristics that affect this relationship

Having a better understanding of these factors would contribute to improving plan protocols for daycare patients receiving laparoscopic cholecystectomy.

Research Hypothesis:
Discharge time is associated with readmission following laparoscopic cholecystectomy and this relationship is modified by patient characteristics.

Study Design:
Cross-sectional descriptive and analytic study using retrospective chart review methods and analyses of secondary data from FH Decision Support Services.

Subjects:
Using hospital admission data, patients will be identified that had daycare laparoscopic cholecystectomy from 3 hospitals (Royal Columbian Hospital, Eagle Ridge Hospital, and Ridge Meadows Hospital).
Inclusion Criteria:
1. Adult patients aged 19 years and older
2. Planned daycare laparoscopic cholecystectomy
4. Surgery performed at Royal Columbian Hospital, Eagle Ridge Hospital, or Ridge Meadows Hospital.

Exclusion Criteria:
1. Surgical procedure involves conversion to open cholecystectomy
2. Cholecystectomy performed with another procedure
3. Pregnant patients
4. Inability to provide informed consent
5. Currently enrolled in any other research study involving drugs or devices

Sample Size:
The estimated annual number of laparoscopic cholecystectomies performed in these hospitals is 300. The literature reports that the incidence of unplanned readmissions following laparoscopic cholecystectomy is approximately 15%. Three years of surgeries will be assessed to sample 100 charts.

2. Title: The benefits of laparoscopic appendectomies in obese patients

Published research: American Journal of Surgery (2012) 203, 609-612

Investigators: Clara Tan-Tam, M.D., Eukua Yorke, M.D. – General Surgery, UBC
Michael Wasdell, M.A., Camelia Barcan, M.C.C., David Konkin, F.R.C.S., Peter Blair, F.R.C.S. – Fraser Health Authority

Background: Systematic reviews and randomized controlled trials comparing laparoscopic appendectomy (LA) with open appendectomy (OA) show a reduction in wound infections associated with LA but a 3-fold increase in intra-abdominal abscess with LA. Surgical time and operation costs are higher with LA. The advantage of LA over OA is small. Although these patients have not been specifically analyzed in the report, the systematic review recommends the routine use of LA in young women and obese people. The purpose of this study is to determine if obese patient benefit in a shorter length of stay (LOS) by having LA versus OA surgery compared with their non-obese counterparts.

Methods: A retrospective chart review of 315 adult patients who have undergone appendectomies at Royal Columbian and Burnaby Hospitals between April 1, 2010 and March 31, 2011. Appendectomies performed in pregnant women combined with other surgeries and those converted to OA were excluded. Outcomes and postoperative stay for obese and non-obese patients were assessed.
Conclusions: Obese patients who undergo LA have a decreased LOS as compared with obese patients who undergo OA for appendicitis. This is the first study showing specifically that LA benefits obese patients and the health care system.

3. Title: Management of the Open Abdomen with the ABRA® Dynamic Fascial Closure System

Presented to: BC Surgical Society 65th Annual Spring Meeting - May 3-5, 2012, Whistler BC

Investigators: Haddock C, Goecke M, Van Heest R, Garraway N, Blair NP, Konkin DE

Background:
With the increase use of damage control surgery and open abdomens, there are increasing challenges in primarily closing the abdomen. The purpose of this study is to retrospectively review our experience in the use of the Abdominal Reapproximation Anchor (ABRA®) System in closing the abdomens of complex abdominal surgical patients.

Methodology:
A retrospective review of patients that had undergone placement of the ABRA® device to aid in the closure of the abdomen was undertaken. Details including age, sex, reason for open abdomen, number of operations, time to primary closure, success of primary closure and complications related to the use of the ABRA® were taken.

Results:
Forty-six patient charts were identified. APACHE II score average 22.9+/-7.9. The number of laparotomies until ABRA placement was 3.3+/-2.1. Time of placement of ABRA until removal was 11.1+/-7.5 days. Complete fascial apposition was achieved in 80%. Component separation was used in 20%. Mesh was used in 19%. Incisional hernia rate was 16% at 6 months and 20% at 12 months.

Conclusions:
The use of the ABRA system resulted in an 80% fascial apposition rate. Incisional hernia rate was acceptable in this complicated patient group. This technique is an excellent addition to a surgeon’s armamentarium for complicated abdominal cases that require an open abdomen. Further prospective studies are planned to identify ideal candidates for this technique.
Additional audits undertaken include:
- Implementation of the Surgical safety checklist and ongoing audits of its use
- Monitoring of Clostridium difficile rates
- Monitoring of physician hand washing rates via audits.

**Morbidity & Mortality Review**

During the period of March 2012 to September 2012 morbidity and mortality review rounds were conducted at local sites for the purposes of evaluating and improving the quality of patient care provided.

2 patient cases were selected for review: 1 case at Langley Memorial Hospital, and 1 case at Chilliwack General Hospital.

Learning points and recommendations for improvement arising from the cases reviewed, and the status of implementation are as follows:

<table>
<thead>
<tr>
<th>Learning Point / Recommendation</th>
<th>Status of Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>LMH: replace the orthopedic power drill</td>
<td>Fully implemented</td>
</tr>
<tr>
<td>CGH: improve communication</td>
<td></td>
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</tbody>
</table>

**Medical Management Review**

On June 14, 2012 a medical management review was conducted for the purposes of evaluating and improving the medical quality of care provided.

Learning points and recommendations for improvement arising from the case(s) reviewed, and the status of implementation are as follows:

1) Surgical Program leadership will help the local anesthesia department to recruit 6 to 7 new anesthesiologists for ARH.

2) Create emergency surgery time as soon as feasible. The goal would be to eventually have 2-3 days per week of emergency surgery time from 7 AM to 3 PM. This would include some form of alternate funding for the anesthesiologists to guarantee a minimum income during that period.

3) Look into the feasibility of dedicated obstetrical anesthesia (DOBA) weekdays from 3 PM to 11 PM, and weekend days from 7 AM to 11 PM. Although ARH falls below the threshold of 3,000 deliveries per year, the complexity and volume of after-hours surgery supports the need for dedicated obstetrical anesthesia.

4) Continue to improve communication between the case room and the operating room so that the after-hours cases can be planned around possible obstetrical emergencies.
5) Before accepting major high priority cases from BC Bedline, surgeons, if at all possible, should check with the operating room and the case room to make sure there are no conflicts.

Evidence Based Practice/Medical Management Tools

The Rapid Surgical Recover initiative has resulted in the development of 3 pre-printed order sets for General Surgery: Daycare, Minor and Major. These pre-printed orders were initially developed and implemented at RCH and are now being implemented region-wide. A clinical practice guideline for VTE prophylaxis is also in place.

Quality Improvement Initiatives

Rapid Surgical Recovery: Royal Columbian Hospital
The objectives of this multi-disciplinary initiative are to standardize and optimize peri-operative care, improve the use of resources, and ensure improved outcomes for patients. Due to the success of this major quality initiative, efforts are under way to promote the spread of these ideas throughout the region, particularly through the use of pre-printed order sets.

National Surgical Quality Improvement Program (NSQIP):

Fraser Health’s 10 surgical sites participate in the American College of Surgeons National Surgical Quality Improvement Program (NSQIP). NSQIP is a data-driven, risk adjusted, outcomes based surgical quality improvement program that allows participating sites to view their performance in comparison to other North American hospitals. Fraser Health participating sites provide NSQIP with specific patient clinical information, and NSQIP provides results to sites on mortality, morbidity and complication rates from which quality can be monitored and improvement opportunities identified and implemented. Each surgical site has a physician champion that is supported by a surgical case reviewer (SCR). Working together, the physician champion and SCR provide data and reports to the local surgical group to facilitate discussions about quality and to identify improvement initiatives. At many of the sites, the physician champion will also have confidential discussions with individual surgeons on their performance in comparison to peers using the NSQIP data.