QMC Inpatient Medicine Curriculum

The Educational Purpose

Inpatient Medicine encompasses the study and practice of health promotion, disease prevention, diagnosis, and treatment of adult patients during times of health and through stages of acute and chronic illness. It requires the mastery of clinical interviewing skills, physical examination, differential diagnosis, diagnostic testing strategies, therapeutic techniques and counseling. Intrinsic to the practice of internal medicine, is the application of the scientific method of problem solving, decision-making, and an attitude of caring driven by humanistic and professional values. The purpose of this rotation is to provide residents many opportunities in which to apply these skills to the field of Inpatient General Medicine.

Patient Care

Goal #1: Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

Objective #1: Residents must be able to gather essential and accurate patient information to assess patient concerns, with special attention to the following presentations:

<table>
<thead>
<tr>
<th>PGY-1</th>
<th>PGY-2</th>
<th>PGY-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oliguria/anuria</td>
<td>Headache</td>
<td>Bleeding diathesis</td>
</tr>
<tr>
<td>Rectal bleeding</td>
<td>Hemoptysis</td>
<td>Intractable pain</td>
</tr>
<tr>
<td>Chest pain</td>
<td>Hemaemesis</td>
<td>Altered mental status</td>
</tr>
<tr>
<td>Tachycardia</td>
<td>Shurred speech</td>
<td></td>
</tr>
<tr>
<td>Palpitations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nausea and vomiting</td>
<td></td>
<td></td>
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<tr>
<td>Lower extremity swelling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin ulcer</td>
<td>Urinary frequency / polyuria</td>
<td></td>
</tr>
<tr>
<td>Weakness, generalized vs. focal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weakness, generalized vs. focal</td>
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</tbody>
</table>

Objective #2: Residents will be able to develop and carry out patient management plans by making informed decisions on diagnostic and therapeutic interventions, counseling and educating patients and their families, and preventing health problems or maintaining health based on patient information and preferences, up-to-date scientific evidence, and clinical judgment with special attention to the following illnesses or conditions:

<table>
<thead>
<tr>
<th>PGY-1</th>
<th>PGY-2</th>
<th>PGY-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute coronary syndrome</td>
<td>Alcohol and drug intoxication &amp; withdrawal syndromes</td>
<td>Community-acquired pneumonia</td>
</tr>
<tr>
<td>Asthma</td>
<td>Endocarditis</td>
<td>Electrolyte and metabolic abnormalities</td>
</tr>
<tr>
<td>Acute renal failure</td>
<td>Complicated skin &amp; soft tissue infections</td>
<td>Meningitis</td>
</tr>
<tr>
<td>Cellulitis/abscess</td>
<td>Dementia</td>
<td></td>
</tr>
<tr>
<td>Urinary tract infection/ pyelonephritis</td>
<td>Pancreatitis</td>
<td></td>
</tr>
<tr>
<td>Gastrointestinal bleeding</td>
<td>Stroke</td>
<td></td>
</tr>
<tr>
<td>Sepsis</td>
<td>Cirrhosis</td>
<td>Pain management</td>
</tr>
<tr>
<td>Congestive heart failure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cholecystitis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Venous thromboembolism</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronic obstructive pulmonary disease</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community-acquired pneumonia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meningitis</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Updated 04/01/2013
<table>
<thead>
<tr>
<th><strong>PGY-3</strong></th>
<th>Mental health disorders complicating acute and chronic medical illnesses</th>
<th>Bowel obstruction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coma</td>
<td>Seizure</td>
</tr>
<tr>
<td></td>
<td>Shock/multiorgan failure</td>
<td>Metastatic malignant diseases</td>
</tr>
<tr>
<td></td>
<td>Complex patients with barriers to care such as language, mental health issues, overwhelmed family members</td>
<td>Nosocomial infection (vascular infection, HAP, CAUTI)</td>
</tr>
<tr>
<td></td>
<td>Triage medical patients with acute changes in condition</td>
<td>Septic arthritis</td>
</tr>
<tr>
<td></td>
<td>Common medical problems in the pregnant patient</td>
<td></td>
</tr>
</tbody>
</table>

**Objective #3:** Residents must competently perform and interpret the results of all diagnostic and therapeutic medical and invasive procedures considered essential after obtaining informed consent, with confidence and minimal discomfort to patients:

**PGY-1**
- Arterial blood gas, nasogastric tube insertion and use, chest x-ray interpretation, ekg interpretation, phlebotomy

**PGY-2**
- Lumbar puncture, paracentesis, central line placement, arterial line placement

**PGY-3**
- Thoracentesis, arthrocentesis, peripheral blood smear interpretation

**Objective #4:** Residents must communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families.

**PGY-1**
- Address patients respectfully and thoughtfully
- Allow patients time to give their histories, voice concerns, and ask questions about their health
- Listen intently to patient histories
- Follow up test results w/patients and discuss next Dx steps

**PGY-2**
- Educate patients about their diseases in layman's language
- Prioritize relevant data obtained through the history
- Investigate patient preferences
- Deliver bad news (terminal or serious new Dx, death)

**PGY-3**
- Address code status specifically
- Begin frank and challenging discussions about end-of-life issues and palliative care with patients and affected family members
- Compassionate request of autopsies

**Objective #5:** Residents must work effectively with other health care professionals including those from other disciplines, to provide patient-focused care.

**PGY-1**
- Collaborate with nursing educators regarding management of diabetes mellitus, pain management, and anticoagulation
- Collaborate with pharmacists, phsiatrist, occupational therapists, speech pathologists, and dieticians concerning patient treatment plans
- Coordinate plan of care with primary care physicians, specialty consultants
- Ensure accurate medication reconciliation

**PGY-2**
- Communicate with social work and case managers concerning safe discharge practices.
- Assess patients for addiction

**PGY-3**
- Work with case management and social work to assess and manage patients with issues related to addiction
- Collaborate with nursing liaisons, geriatricians, and phsiatrist in planning long term care for chronically ill patients
- Interact with psychiatry consultants in management of patients with suicide attempts and chronic mental health disorders who are admitted to the medical service
- Address multiple social complexities with patient and social work

*Updated 04/01/2013*
**Medical Knowledge**

Goal #2: Residents must demonstrate knowledge about established and evolving biomedical, clinical, and cognate (e.g. epidemiological and social-behavioral) sciences and the application of this knowledge to patient care.

Objective #1: Residents must demonstrate an investigatory and analytical thinking approach to clinical situations.

<table>
<thead>
<tr>
<th>PGY-1</th>
<th>Incorporate standards of care and established guideline recommendations for routine hospitalization diagnoses: Community-acquired pneumonia, congestive heart failure, cellulitis</th>
</tr>
</thead>
<tbody>
<tr>
<td>PGY-2</td>
<td>Apply evidence-based medicine standards for typical internal medicine problems: Acute Coronary Syndrome, Venous Thromboembolism, Chronic Obstructive Pulmonary disease</td>
</tr>
<tr>
<td>PGY-3</td>
<td>Incorporate peer-reviewed society and governance guidelines to particular patient situations: stroke, gastrointestinal bleeding, soft tissue infections, nosocomial infections</td>
</tr>
<tr>
<td></td>
<td>Residents will assess the need for antibiotic prophylaxis consistent with current SCIP guidelines</td>
</tr>
<tr>
<td></td>
<td>residents will assess the need for anticoagulation as prophylaxis against thrombotic or thromboembolic complications</td>
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<tr>
<td></td>
<td>Residents must effectively implement the ACC recommendations for pre-operative risk assessments in patients undergoing non-vascular surgeries</td>
</tr>
</tbody>
</table>

Objective #2: Residents must know and apply the basic and clinical supportive sciences applicable to general internal medicine with special attention to:

<table>
<thead>
<tr>
<th>PGY-1</th>
<th>Principles of antiplatelet therapy and anticoagulation in the setting of venous thromboembolism, cardiac dysrhythmia, acute coronary syndromes, cerebrovascular disease, DVT prevention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pharmacokinetics in renal and liver failure</td>
</tr>
<tr>
<td></td>
<td>Role of acid suppression, gut rest, and somatostatin analogues in gastrointestinal hemorrhage</td>
</tr>
<tr>
<td></td>
<td>Antibiotic selection for routine infections requiring hospitalization</td>
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<tr>
<td></td>
<td>Recognition of an acute abdomen</td>
</tr>
<tr>
<td></td>
<td>Indications for antibiotics, corticosteroids, and bronchodilators for chronic obstructive pulmonary disease</td>
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<tr>
<td></td>
<td>Evidence supporting empiric treatment of skin infections</td>
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<tr>
<td></td>
<td>Beta-blockers, ace inhibitors and diuretics for acute heart failure</td>
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<tr>
<td></td>
<td>Mechanisms of antibiotic resistance for common nosocomial infections</td>
</tr>
<tr>
<td>PGY-2</td>
<td>Rate control versus rhythm control for atrial fibrillation</td>
</tr>
<tr>
<td></td>
<td>Evidence supporting use of acid suppressants in hospitalized medical patients</td>
</tr>
<tr>
<td></td>
<td>Evidence supporting anticoagulants for venous thrombosis prevention</td>
</tr>
<tr>
<td></td>
<td>Opioid and non-opioid management of acute and chronic pain</td>
</tr>
<tr>
<td></td>
<td>Management of poorly controlled diabetes</td>
</tr>
<tr>
<td>PGY-3</td>
<td>Application of institutional antibiotic nomograms to nosocomial infections</td>
</tr>
<tr>
<td></td>
<td>Awareness of newly approved medications &amp; devices for general medical problems</td>
</tr>
<tr>
<td></td>
<td>Peri-operative risk assessments and peri-operative optimization</td>
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<tr>
<td></td>
<td>Cost-effectiveness analyses of common acute medical conditions (pneumonia, chf)</td>
</tr>
</tbody>
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Updated 04/01/2013
### Practice-Based Learning and Improvement

Goal #3: Residents must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning.

**Objective #1:** Residents must locate, appraise, and assimilate evidence (EBM) from scientific studies related to their patients’ health problems.

<table>
<thead>
<tr>
<th>PGY-1</th>
<th>Inpatient management of diabetes mellitus and hyperglycemia, monitor adherence to joint commission guidelines for Community acquired pneumonia</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Generate clinical question(s) based on individual patient encounters</td>
</tr>
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<table>
<thead>
<tr>
<th>PGY-2</th>
<th>Compare resident practices with those of the ACC for treatment of CHF and NSTEMI</th>
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<tbody>
<tr>
<td></td>
<td>Search the literature for answers to specific clinical questions.</td>
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</table>

<table>
<thead>
<tr>
<th>PGY-3</th>
<th>Assess competency for management of acute stroke</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Appraise and apply current literature to patient care</td>
</tr>
<tr>
<td></td>
<td>Access the most current information using new technology</td>
</tr>
<tr>
<td></td>
<td>Recognize strengths and limitations of various types of studies.</td>
</tr>
</tbody>
</table>

**Objective #2:** Residents must compare their own clinical practice according to standards of care.

<table>
<thead>
<tr>
<th>PGY-3</th>
<th>Residents must assess and compare their own performance to that of their peers and the current standards of care.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Residents should identify areas for improvement.</td>
</tr>
</tbody>
</table>

**Objective #3:** Residents must be able to facilitate the education of students and other health care professionals.

<table>
<thead>
<tr>
<th>PGY-3</th>
<th>Residents manage work rounds with residents and medical students.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>residents instruct medical students in clinical skills, i.e. physical exam, procedures, interpretation of diagnostics</td>
</tr>
</tbody>
</table>

### Interpersonal and Communication Skills

Goal #4: Residents must demonstrate interpersonal and communication skills that result in effective exchange of information and collaboration with patients, their families, and health professionals.

**Objective #1:** Residents must be able to sustain therapeutic and ethically sound relationships with patients, their families, and colleagues.

<table>
<thead>
<tr>
<th>PGY-1</th>
<th>Residents must gain facility with interviewing surrogates and relatives when the patient is unable to give historical information.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PGY-2</td>
<td>residents must also maintain contact with outpatient clinic doctors who have long-standing relationships with patients and their families</td>
</tr>
</tbody>
</table>

**Objective #2:** Residents must use effective listening, nonverbal, questioning, and narrative skills to communicate with patients and families.

<table>
<thead>
<tr>
<th>PGY-1</th>
<th>assess need for language interpreters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Utilize language interpreters and resources, such as Marti, when necessary.</td>
</tr>
</tbody>
</table>

**Objective #3:** Residents must maintain comprehensive, timely, and legible medical records.

<table>
<thead>
<tr>
<th>PGY-1</th>
<th>Histories, interim, and discharge summaries must be completed in an accurate and timely fashion (within 24 hrs)</th>
</tr>
</thead>
</table>

**Objective #4:** Residents must provide effective consultation to other physicians and health care professionals.

<table>
<thead>
<tr>
<th>PGY-2</th>
<th>specify reason(s) for the consultation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Clarify the specific needs of the consultant</td>
</tr>
</tbody>
</table>

| PGY-3 | Attempt direct communication with the attending physician                                                      |

**Objective #5:** Residents must gain facility with discussing end-of life care with terminally ill patients and their families.

<table>
<thead>
<tr>
<th>PGY-3</th>
<th>Specifically address DNAR with patients and their families/surrogates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>residents must become familiar with the role of hospice and palliative in treating terminal patients</td>
</tr>
</tbody>
</table>

**Objective #6:** Residents must acquire skill and confidence with presenting patient cases, formal teaching didactics, and EBM to peers in supervised setting (group).

<table>
<thead>
<tr>
<th>PGY-3</th>
<th>Evidence-based presentation in a group setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>PGY-3</td>
<td>Deliver formal didactics in a group setting</td>
</tr>
</tbody>
</table>
Residents must learn to utilize interdisciplinary teams such as diabetes education and pain management in an 
effective manner.

Residents must be fully cognizant of HIPAA regulations as they apply to patient confidentiality.

Upper level residents must review case presentations with interns and medical students and tactfully and 
constructively point out errors and alternatives

Residents must recognize their specific role on the inpatient care team and contribute to the optimal function of 
the unit.

Residents must learn to utilize the hospital medication formulary.

Residents must become familiar with infection control measures including isolation criteria to include antibiotic-
resistant organisms

Residents must learn the hospital abx nomogram in the Rx of infections

Residents must coordinate care among nutrition, pharmacy, and physiatry specialists in the approach to optimize 
patient care.

Residents must be held accountable for processes of care and to insure adequate handing-off of important health 
care information to covering colleagues who serve as cross-coverage

Residents must incorporate hospital abx nomogram in the Rx of infections

Residents must apply cost-effective strategies in diagnostic evaluation

Residents must be able to utilize hospital as well as community resources to help patients safely transition from the 
acute care hospital setting.

Residents should recognize elements and a culture of patient safety

Residents should actively participate in discussions of "patient safety messages"

End of life care issues must be discussed delicately and appropriately with patients, family, and supportive 
services present at the institution.

Residents must understand criteria for different levels of care administered at hospitals

Residents must assess patient care needs for more intensive monitoring such as intensive care and telemetry 
strategies.

Residents must perform consultations in a timely manner appropriate to the acuity of the reason for the consult

Residents must participate in Morbidity and Mortality Conference

Residents should protect patient information from breaches, with particular attention to electronic transmission

Residents must be held accountable for processes of care and to insure adequate handing-off of important health 
care information to covering colleagues who serve as cross-coverage

Residents must perform consultations in a timely manner appropriate to the acuity of the reason for the consult

Residents must incorporate hospital abx nomogram in the Rx of infections

Residents must apply cost-effective strategies in diagnostic evaluation

Residents must be able to utilize hospital as well as community resources to help patients safely transition from the 
acute care hospital setting.

Residents should recognize elements and a culture of patient safety

Residents should actively participate in discussions of "patient safety messages"
The Teaching Methods

1. Supervised patient care
2. Attending combined work and teaching rounds
3. Morbidity and Mortality Conferences
4. Morning Reports
   a. Case Presentation
   b. Case Didactic
   c. Follow-up to Clinical Question
   d. Patient Safety Stories
5. Noon Conferences
   a. Subspecialty Case Conferences
      - Infectious Diseases, Nephrology, Neurology, Gastroenterology
   b. Evidence Based Medicine Conferences
   c. General Internal Medicine Topics - Case-Based Learning Modules
   d. Interdisciplinary Ethics Conference
   e. New Doc 101 - interactive cases with focus on intern cross coverage
6. Radiology Rounds
7. Queen's Grand Rounds
Iatrogenesis

Inpatient Diabetes Management
15 American Diabetes Association Clinical Practice Recommendations in Diabetes Care, January 2008; 31:S12-54.

DKA
16 Diabetes Care 2009 July; 32 (7): 1164
20 Barsotti MM, Potassium phosphate and potassium chloride in the treatment of DKA. Diabetes Care 1980; 3:569
Acute MI


29 CABRI Trial Participants First-year results of CABRI (Coronary Angioplasty versus Bypass Revascularisation Investigation) Lancet 1995; 346:1179.


Heart Failure


48 Sorrentino, M. Heart Failure: Update on Therapeutic Options. Consultant February 2007; 170-175


GI Bleed


Acute Pancreatitis


Hyponatremia

70 Uptodate.com

Pulmonary Embolism

79 Rose BD. Treatment of hyponatremia. In: UpToDate, Basow, DS (Ed), UpToDate, Waltham, MA, 2008.

Pulmonary Embolism

86 Bauer, KA. Long-term Management of Venous Thromboembolism: A 61 year old woman with unprovoked VTE. JAMA 2011;305(13) 1336-1345
101 Wells PS, Owen C, Doucette S, Fergusson D, Tran H. Does this patient have deep vein thrombosis? JAMA. 2006 Jan 11;295(2):199-207

**HTN Emergency**


Updated 04/01/2013
Atrial Fibrillation


COPD


124 Stoller JK. Management of acute exacerbations of chronic obstructive pulmonary disease, UpToDate.


Asthma


Osteomyelitis/Diabetic Foot Ulcer

Updated 04/01/2013
Acute Renal Failure


Acute Renal Failure


Community Acquired Pneumonia


Cirrhosis & SBP

Alcohol Withdrawal

Elderly Delirium

Acute Stroke

2009 American Heart Association, Inc. www.strokeassociation.org
Guidelines for Prevention of Stroke in patients with Ischemic Stroke or TIA Stroke 2006:37:577
Mitka M. Rapid Diagnosis and Treatment of TIA's Help Reduce Recurrent Stroke Risk JAMA.2007;298(20):2358-2359

Circulation. 2004; 126: 461-469
Circulation. 2007 May 15; 115 (19): 2549-69

Elderly Delirium

Turnheim, K, drugs aging. 1998; 13 (5): 357-79
Arch Intern Med 2003: 163:2716-2724
Chest. 2004; 126: 461-469
Circulation. 2007 May 15; 115 (19): 2549-69

Alcohol Withdrawal

MRSA Infection

239 Ananya DA and Dellinger EP. CID 2007; 44:705-10.
241 David MZ et al. JID 2008;197:1235-43.
242 Fridkin et al NEJM 2005;352:1436-44.
243 Gortwitz RJ et al. JID 2008;197:1226-34.
245 http://www.cdc.gov/mrsa/mrsa_initiative/skin_infection/mrsa_algorithm.html
246 http://www.cdc.gov/ncidod/dhqp/ar_mrsa_ca_clinicians.html
251 Miller LG and Diep BA. CID 2008;46:752-60.
253 Moise-Broder PA et al. CID 2004;34:1700-05.

Abnormal LFTs


Syncope


Evidence Based Medicine

275 acpiw@mcmasterhkr.com
276 http://choosingwisely.org
277 http://plus.mcmaster.ca/evidenceupdates/
278 http://tripdatabase.com
279 http://evidence.nhs.com
280 http://clinicalevidence.bmj.com/x/index.html
281 http://ebm.bmj.com
282 http://www.jamaevidence.com/
283 http://health.library.emory.edu/communities/clinical
284 Dynamed (access from HML)
285 Crone Library http://www.cochrane.org/
286ACP Journal Club-now Journal Wise http://acpjc.acponline.org/
291 University of illinois at Chicago, University Library: Evidence Based Medicine, http://researchguides.uic.edu/content.php?pid=232200&sid=1921074
Systems Based Practice and Patient Safety


CHEST February 2012; Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines 141(2_suppl):11-2288


Night Float


Burki NK. Acute dyspnea: is the cause cardiac or pulmonary -- or both? Consultant 2000; 40: 542.

Agnelli G & Becattini C. Acute pulmonary embolism. NEJM 2010; 363(3): 266-274.


Appelbaum PS. Clinical Practice: Assessment of patient’s competence to consent to treatment. NEJM 2007; 357(18): 1834-40.


Misc


Revised by Drs. Dennis Bolger & Sandra Loo, November 2012
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Reviewed and Approved by The Curriculum Committee February 8, 2013