

University of Nevada, Reno  
School of Medicine

Syllabus:  
Internal Medicine Clerkship, Elko

IMed 651

Elko, Nevada

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Clerkship Director

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## **Internal Medicine Clerkship**

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## INTRODUCTION

Dear Student,

Welcome to your Internal Medicine Clerkship. You have a unique opportunity to rotate in a rural setting in Nevada and see Internal Medicine from this perspective. This clerkship is one of the core clerkships across the country because we tend to teach the basics about many disease processes. Chances are the internist is the picture you have of a doctor when you entered medical training.

Students that have excelled in Elko have been self starters that study consistently throughout the clerkship. You will have a variety of opportunities in both inpatient and outpatient medicine as well as opportunities unique to Elko such as Emergency Room work. If you have any interest I encourage you to take advantage of these opportunities.

Welcome aboard. Please call me with any questions.

Sincerely,

Lisa Calvo, MD  
Clerkship Director

# Course Objectives

## Attitudes

Medical students must demonstrate respect for patients, health care professionals and other students. Students must also be able to communicate effectively with all members of the health care team: fellow students, residents, nurses, therapists, and secretaries. Patient confidentiality must be respected at all times. Students should be on time to all functions and dress and act in a professional manner (hospitals do not allow open toed sandals. It is a violation of hospital policy.)

University of Nevada, Reno School of Medicine institutional objectives P-5.3;P5.5;P5.4;P5.7

## **Skills**

History and Physical Examination:

- Students should be able to elicit the patient's chief complaint, history of present illness, past medical history, social, family, occupational histories and complete a review of systems. (PC-2.1)
- Perform a physical examination in a logical, organized and thorough manner. (PC-2.1)
- Demonstrate the ability to construct an assessment and plan for an individual patient organized by problem, discussing the likely diagnosis and plan of treatment. (PC-2.3)
- Demonstrate the ability to record the history and physical in a legible and logical manner. (ICS-4.4)
- Demonstrate the ability to write daily progress notes on the ward and appropriate outpatient progress notes. (ICS-4.4)

Case Presentation

- orally present a new patient's case in a focused manner, chronologically developing the present illness, summarizing the pertinent positive and negative findings as well as the differential diagnosis and plans for further testing and treatment. *Reading your H&P is not an adequate case presentation!* (ICS-4.3)
- orally present a follow-up patient's case, focusing on current problems, physical findings, and diagnostic and treatment plans. (ICS-4.3)

Diagnostic Decision Making

- formulate a differential diagnosis based on the findings from the history and physical examination. (MK-1.5)
- Use the differential diagnosis to help guide diagnostic test ordering and its sequence. (PC-2.2)
- participate in selecting the diagnostic studies with the greatest likelihood of useful results.
- recognize that tests are limited and the impact of false positives/false negatives on information. (PC-2.2; MK-1.4)

Test Interpretation

- Describe the range of normal variation in the results of a complete blood count, blood smear, electrolyte panel, general chemistry panel, electrocardiogram, chest X-ray, urinalysis, pulmonary function tests, and body fluid cell counts. (MK-1.1)
- Describe the results of the above tests in terms of the related pathophysiology. (MK-1.1 & 1.2)

- understand the importance of personally reviewing X-ray films, blood smears, etc. to assess the accuracy and importance of the results. (SBP-6.4)

#### Therapeutic Decision Making

- Describe factors that frequently alter the effects of medications, including drug interactions and compliance problems. (MK-1.2; SBP-6.4)
- Formulate an initial therapeutic plan. (PC-2.3)
- Access and utilize, when appropriate, information resources to help develop an appropriate and timely therapeutic plan. (PBL-3.2)
- write prescriptions accurately.
- counsel patients about how to take their medications and what to expect when they take their medications, including beneficial outcomes and potential adverse effects. (ICS-4.2)
- monitor response to therapy. (SBP-6.3 & 6.4)

### **Core Problems and Objectives**

It is the expectation of the internal medicine faculty that you should be exposed to the following core problems during the clerkship. Please look for opportunities during the clerkship to work with patients that have these disease states as experience is really the best teacher. Where applicable, understand the clinical features, differential diagnosis, evaluation and management of the following:

#### **Acute Renal Failure / Acute Kidney Injury**

Students should be able to describe, define and discuss:

1. The three major pathophysiologic causes of ARF – prerenal, intrinsic renal and post-renal
2. The initial history and evaluation of ARF
3. Indications for acute dialysis
4. The laboratory work up of ARF
5. Recognize that drug elimination is altered in ARF and adjust medications accordingly
6. Understand how to calculate a GFR and the limited utility of this in ARF

#### Recommended study resources:

- Harrison's Principles of Internal Medicine, Chapter 279
- Internal Medicine Essentials for Students Chapters 60 + 61 (or another review text)
- SIMPLE case 33

#### **Chronic Kidney Disease**

Students should be able to understand and discuss:

1. The major etiologies of chronic kidney disease, including DM, HTN, glomerulonephritis, polycystic kidney disease, and autoimmune disease
2. The stages of CKD and significance of proteinuria
3. Indications for ACE-I and ARBs, possible adverse effects
4. Management of hyperparathyroidism and anemia in CKD
5. Basic principles of renal replacement therapy (hemodialysis, peritoneal dialysis) and their complications
6. Interpretation of electrolyte abnormalities commonly seen in CKD

## 7. EKG findings of hyperkalemia

### Recommended study resources:

- Harrison's Principles of Internal Medicine, Chapter 280 and 281
- Internal Medicine Essentials for Students, Chapter 62
- SIMPLE case 23

### **Altered Mental Status**

Students should be able to describe and understand:

1. The differentiation of delirium, dementia, and depression.
2. The pathophysiology, symptoms, and signs of the most common and most serious causes of altered mental status, including:
  - Metabolic causes
  - Structural lesions
  - Vascular causes
  - Infectious causes
  - Seizures / post-ictal state
  - Hypertensive encephalopathy
  - Low perfusion states
  - Medication induced
3. Understand the risk factors for developing altered mental status
4. Diagnostic evaluation including the role of lumbar puncture and head imaging.

### Recommended study resources:

- Harrison's Principles of Internal Medicine, Chapter 25- Confusion and Delirium
- SIMPLE case 25

### **Chest Pain**

Students should be able to describe:

1. The symptoms, signs, risk factors, diagnostic work-up and treatment for:
  - a. **Acute Coronary Syndrome** (STEMI, NSTEMI, Unstable Angina)
  - b. Pericarditis
  - c. **Aortic dissection**
  - d. Valvular heart disease
  - e. Atypical or variant angina
  - f. Various GI related disorders that can cause chest pain (esophageal disorders, ulcer, pancreatitis, biliary disease)
  - g. Pulmonary disorders causing chest pain (pneumonia, pleurisy, **pulmonary emboli, pneumothorax**)
  - h. Musculoskeletal causes (rib fracture, costochondritis, zoster)
  - i. Psychogenic causes (panic disorder, hyperventilation, somatoform)
2. Be able to describe and interpret classic EKG findings for ACS and pericarditis.
3. Understand and define the indications for- echocardiogram, exercise stress test, stress thallium, coronary angiogram, spiral CT for PE.
4. Understand that the work up of chest pain must include the "cannot miss diagnoses" (in bold above)
5. Understand the indications and major side effects of the various cardiovascular medication classes including beta blockers, ACE inhibitor/ARBs, anti-platelet

agents, nitrates, calcium channel blockers, antithrombotic therapy, lipid lowering agents, thrombolytic therapy

Recommended study resources:

- Internal Medicine Essentials for Students Chapters 1,2
- SIMPLE case 1

**Acute Coronary Syndromes**

Students should be able to describe, define and discuss:

1. The primary and secondary prevention of ischemic heart disease through the reduction of cardiovascular risk factors
2. The basic principles of the role of genetics in CAD.
3. Pathogenesis, signs, and symptoms of the acute coronary syndromes:
  - a. Unstable angina.
  - b. Non-ST-elevation myocardial infarction (NSTEMI).
  - c. ST-elevation myocardial infarction (STEMI).
4. Atypical presentations of cardiac ischemia/infarction.
5. The typical clinical course of the acute coronary syndromes.
6. ECG findings and macromolecular markers (myoglobin, CK-MB, Troponin-I, Troponin-T) of acute ischemia/MI.
7. The utility of echocardiography in acute MI.
8. The importance of monitoring for and immediate treatment of ventricular fibrillation in acute MI.
9. Therapeutic options for acute MI and how they may differ for NSTEMI and STEMI
10. Pathogenesis, signs, and symptoms of the complications of acute MI, including arrhythmias, reduced ventricular function, cardiogenic shock, pericarditis, papillary muscle dysfunction/rupture, acute valvular dysfunction, and cardiac free wall rupture.

Recommended Study Resources:

- Harrison's Principles of Internal Medicine, Chapter 244-245
- Internal Medicine Essentials for Students Chapters 1,3
- SIMPLE case 2

**Common Cancers (skin, colorectal, lung, breast, cervical, prostate)**

Students should be able to define, describe, discuss:

1. Current screening recommendations for these cancers
2. Basic methods of initial evaluation, including the sensitivity and specificity of basic diagnostic studies and indication for their use, including: indications for colonoscopy, breast biopsy, lymph node biopsy.
3. Principles of palliative and hospice care

Attitudes and Skills:

1. Understand principles of relieving pain and other symptoms at the end of life including managing narcotic side effects.
2. Be able to adjust treatment and diagnostic plans when goals of care change (i.e. hospice)
3. Have a framework for delivering bad news

Recommended Study Resources

- Internal Medicine Essentials for Students Chapters 73-79
- SIMPLE cases 13, 17

- Baile WF, Buckman R. SPIKES- A Six Step Protocol for Delivering Bad News... *The Oncologist*. 2000;5:302-311 (used in CRM class as well)

## **COPD**

Students should be able to define, describe, and discuss:

1. The epidemiology, risk factors, symptoms, signs, and typical clinical course of the common forms of COPD, including chronic bronchitis and emphysema.
2. Common causes of acute exacerbations of COPD (AECOPD), including:
  - a. Acute infectious bronchitis.
  - b. Pneumonia.
  - c. Pulmonary edema.
  - d. Poor air quality (e.g. ozone, pollutants, tobacco smoke).
  - e. Occupational exposures.
  - f. Medical noncompliance.
3. The etiology, pathogenesis, evaluation, and management of hypoxemia and hypercapnia.
4. The epidemiology, risk factors, symptoms and signs and typical clinical course of asthma.
5. Pharmacologic therapy for COPD and asthma
6. Recommend indications for diagnostic testing and interpret correctly
  - a. Pulse oximetry
  - b. ABG
  - c. CXR
  - d. PFTs

### Attitudes and Skills

1. Be able to counsel patients on smoking cessation
2. Understand judicious use of antimicrobial treatment

### Recommended Study Resources:

- Harrison's Principles of Internal Medicine, Chapter 260
- National Heart Lung and Blood institute guidelines. [www.goldcopd.com](http://www.goldcopd.com)
- SIMPLE case 28

## **Diabetes Mellitus**

Students should be able to understand and discuss:

1. Diagnostic criteria for impaired fasting glucose and impaired glucose tolerance
2. Diagnostic criteria for type I and type II diabetes mellitus, based on a history, physical examination, and laboratory testing.
3. Pathophysiology, risk factors, and epidemiology of type I and type II diabetes mellitus.
4. The basic principles of the role of genetics in diabetes mellitus.
5. Presenting symptoms and signs of type I and type II diabetes mellitus.
6. Presenting symptoms and signs of diabetic ketoacidosis (DKA) and nonketotic hyperglycemic (NKH).
7. Precipitants of DKA and NKH.

8. Major causes of morbidity and mortality in diabetes mellitus (coronary artery disease, peripheral vascular disease, hypoglycemia, DKA, NKH coma, retinopathy, neuropathy—peripheral and autonomic, nephropathy, foot disorders, infections).
9. Non-pharmacologic and pharmacologic (drugs and side effects) treatment of diabetes mellitus to maintain acceptable levels of glycemic control, prevent target organ disease, and other associated complications.
10. The specific components of the American Diabetes Association (ADA) dietary recommendations for type I and type II diabetes mellitus.
11. Basic management of diabetic ketoacidosis and nonketotic hyperglycemic states, including the similarities and differences in fluid and electrolyte replacement.

Skills:

1. Be able to recommend and interpret common diagnostic tests in the work up and management of DM.
2. Be able to develop adequate treatment plans for DKA, NKH
3. Counsel patients on behavior modification

Recommended Study Resources:

- Mandatory Lecture
- Harrison's Principles of Internal Medicine, Chapter 344
- Simulation activities, SIMPLE cases 7,8
- Internal Medicine Essentials for Students, chapters 9, 10

## Dyspnea

Students must:

1. Understand the major organ systems/pathologic states causing dyspnea and their pathophysiology, including:
  - a. Cardiac.
  - b. Pulmonary
  - c. Anemia/hypovolemia
  - d. Acid-base disorders and other metabolic derangements
  - e. Neuromuscular weakness
  - f. Central neurologic derangements.
2. Understand the symptoms, signs, and laboratory values associated with respiratory failure and ventilatory failure.
3. Understand the common causes of acute dyspnea, their pathophysiology, symptoms, and signs, including:
  - a. Pulmonary edema.
  - b. Pulmonary embolism.
  - c. Pneumonia.
  - d. Acute exacerbation of COPD.
  - e. Asthma.
  - f. Cardiac ischemia.
  - g. Pneumothorax.
  - h. Anxiety.
4. Understand the common causes of chronic dyspnea their pathophysiology, symptoms, and signs, including:
  - a. Congestive heart failure

- b. COPD.
  - c. Pulmonary parenchymal disease.
  - d. Pulmonary vascular disease.
  - e. Anemia.
  - f. Neuromuscular weakness.
5. Know basic treatment options for the common causes of acute and chronic dyspnea.
  6. Understand the basic laboratory and other diagnostic tests useful in evaluating dyspnea including the interpretation of CXR.
  7. The utility of supplemental oxygen therapy and the potential dangers of overly aggressive oxygen supplementation in some pathophysiologic states.
  8. Students must be able to perform a history and physical that distinguishes among the various etiologies of dyspnea and be able to develop a prioritized differential diagnosis.

Recommended study resources:

- Review text book for specific diseases that contribute to dyspnea
- Harrison's Principles of Internal Medicine, Chapter 33
- Simulation activities, SIMPLE cases 4, 28, 30

**Fluid, Electrolytes and Acid-Base Disorders**

Students should be able to define, describe and discuss:

1. The pathophysiology of:
  - a. Hypo- and hypervolemia.
  - b. Hypo- and hypernatremia.
  - c. Hypo- and hyperkalemia.
  - d. Hypo- and hypercalcemia.
  - e. Simple and mixed acid-base disorders.
  - f. Hypo- and hyperphosphatemia.
  - g. Hypo- and hypermagnesemia.
  - h. Respiratory acidosis and alkalosis.
  - i. Metabolic acidosis and alkalosis.
2. Presenting symptoms and signs of the above disorders.
3. The importance of total body water and its distribution.
4. The differential diagnosis of hypo- and hypernatremia in the setting of volume depletion, euolemia, and hypervolemia.
5. How to distinguish hyponatremia from pseudohyponatremia.
6. How to identify spurious hyperkalemia or acidosis-related hyperkalemia.
7. Risks of too rapid or delayed therapy for hyponatremia.
8. The most common causes of respiratory acidosis, respiratory alkalosis, metabolic acidosis and metabolic alkalosis.
9. How to calculate the anion gap and explain its relevance to determining the cause of a metabolic acidosis.
10. The types of fluid preparations to use in the treatment of fluid and electrolyte disorders.
11. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them.

12. Students should be able to develop an appropriate evaluation and treatment plan for patients that includes:
  - a. Writing appropriate fluid orders for the treatment of hypo- and hypervolemia, hypo- and hypernatremia, hypo- and hyperkalemia, hypo- and hypercalcemia.
  - b. Writing appropriate orders for replacing sodium, potassium, calcium, phosphates, and magnesium.
  - c. Writing appropriate orders for correcting hyperkalemia, hypercalcemia, hyperphosphatemia and hypermagnesemia.

Recommended study resources:

- Relevant pages in Pocket Medicine
- Harrison's Principles of Internal Medicine, Chapter 45
- Internal Medicine Essentials for Students Chapter 64
- SIMPLE cases: 25,26,28

### **Gastrointestinal Bleeding**

Students should be able to understand and discuss:

1. The common causes for and symptoms of upper and lower gastrointestinal blood loss, including:
  - a. Esophagitis/esophageal erosions.
  - b. Mallory Weiss tear.
  - c. Peptic and duodenal ulcer disease.
  - d. Esophageal/gastric varices.
  - e. Erosive gastritis.
  - f. Arteriovenous malformations.
  - g. Gastrointestinal tumors, benign and malignant.
  - h. Diverticulosis.
  - i. Ischemic colitis.
  - j. Hemorrhoids.
  - k. Anal fissures.
2. The distinguishing features of upper versus lower GI bleeding
3. The indications for inpatient versus outpatient evaluation and treatment
4. The principles of stabilization and treatment of acute massive GI blood loss.
5. The role of contributing factors in GI bleeding such as H. pylori infection;
6. NSAIDs, alcohol, cigarette use, coagulopathies; and chronic liver disease.

Skills:

1. Students must be able to perform a focused history and physical exam for a patient with a GI bleed.
2. Initiate a diagnostic work up for a patient including ordering appropriate tests and interpreting them.
3. Understand the role and indications of IV fluids and blood products in GI bleeding

Recommended Study Resources

- Harrison's Principles of Internal Medicine, Chapter 41
- Internal Medicine Essentials for Students Chapter 23
- Simulation exercises, SIMPLE case 10

## Dyslipidemia

Students should be able to define, discuss and describe:

1. Screening recommendations for dyslipidemias
2. The current National Cholesterol Education Program guidelines for risk factor assessment, diagnosis and management of DLBasic management of the common dyslipidemias, including diet, fiber, exercise, and risk/benefits/cost of drug therapy (statins, fibrates, ezetimide, nicotinic acid, resins)
3. Diagnosis and implications of the metabolic syndrome
4. Be able to recommend when to order diagnostic testing and be able to interpret them, including
  - a. Fasting Lipid Profile
  - b. TSH
  - c. Fasting glucose, electrolytes, BUN/Cr
  - d. Hepatic panel
  - e. CPK

### Recommended Study Resources

- Harrison's Principles of Internal Medicine, Chapter 356
- Adult Treatment Panel 3 from the NCEP – executive summary

## HIV

Students should be able to define, describe, discuss:

1. Symptoms and signs of acute HIV seroconversion.
2. CDC AIDS case definition.
3. Specific tests for HIV (e.g. HIV ELISA, confirmatory western blot, quantitative PCR) and their operating characteristics.
4. Relationship of CD4 lymphocyte count to opportunistic infections as well as relationship between CD4 lymphocyte count and viral load to overall disease progression.
5. The basic principles of highly active antiretroviral therapy (HAART), including the different classes of antiviral medications and their use, as well as common side effects and drug-drug interactions.
6. Vaccination recommendation for patients infected with HIV.
7. Pathogenesis, symptoms, signs, typical clinical course, and management of HIV-related opportunistic infections with a recognition of which are most common:
  - a. *Pneumocystis jiroveci*.
  - b. Candidiasis (oral, esophageal, vaginal).
  - c. *Cryptococcus neoformans*.
  - d. *Cryptosporidium parvum*.
  - e. Cytomegalovirus infection (gastrointestinal, neurologic, retinal).
  - f. Varicella-zoster virus.
  - g. *Isospora belli*.
  - h. Microsporidiosis.
  - i. *Mycobacterium avium complex*.
  - j. *Mycobacterium tuberculosis*.
  - k. *Toxoplasma gondii*.

### Skills:

1. Advising patients regarding HIV transmission prevention.
2. Appreciate the sometimes severe social stigma of HIV infection and AIDS.

### Recommended Study Resources:

- Harrison's Principles of Internal Medicine, Chapter 189
- Internal Medicine Essentials for Students Chapter 54
- SIMPLE case 20

## **Heart Failure**

Students should be able to describe and understand:

1. The various etiologies of heart failure (ischemic, valvular, hypertrophic, inflammatory, infiltrative, etc.)
2. The basic pathophysiology and mechanisms of heart failure including systolic dysfunction, diastolic dysfunction, and ventricular remodeling
3. Factors leading to symptomatic exacerbation of heart failure
4. Key signs and symptoms of heart failure including dyspnea, fatigue, edema, orthopnea, paroxysmal nocturnal dyspnea, etc.
5. Assessing the functional capacity of patients, including understanding the New York Heart Association Classification
6. Key physical exam elements and expected findings in heart failure
7. Indications for and interpretation of key laboratory and diagnostic tests, including BNP & other biomarkers, electrocardiogram, echocardiogram, etc.
8. The pharmacologic and non-pharmacologic management of heart failure, including indications and side effects of commonly used agents such as diuretics, beta-blockers, ACE-inhibitors, angiotensin receptor blockers, aldosterone antagonists, digoxins, etc.
9. Indications for cardiac resynchronization therapy and implantable cardioverter defibrillator placement

### Recommended study resources:

- Harrison's Principles of Internal Medicine, Chapters 234 Heart Failure and Cor Pulmonale & 237 Valvular Heart Disease
- Internal Medicine Essentials for Students, Chapter 7
- SIMPLE case 4

## **Hypertension**

1. The etiologies and relative prevalence of primary and secondary hypertension.
2. The basic principles of the role of genetics in hypertension.
3. The definition of hypertensive urgency and emergency, citing examples of both.
4. The difference between essential (primary) and secondary hypertension.
5. Symptoms and signs of the following disorders associated with secondary hypertension:
  - Renovascular hypertension.
  - Renal failure.
  - Polycystic kidney disease.
  - Cushing's disease or syndrome.
  - Hyperaldosteronism.

- Hyperthyroidism.
  - Hypercalcemia.
  - Medication, alcohol, and illicit drug use.
  - Coarctation of the aorta.
  - Sleep apnea
6. The manifestations of target-organ disease due to hypertension.
  7. Classification of blood pressure (SBP and DBP for all age 18 or older).
  8. Basic approaches to the pharmacological management of acute and chronic hypertension, including the physiologic basis and scientific evidence supporting these approaches, and causes for lack of responsiveness to therapy.
  9. Prevention strategies for reducing hypertension (including lifestyle factors, such as dietary intake of sodium, weight, and exercise level), and explain the physiologic basis and/or scientific evidence supporting each strategy.
  10. Steps in management of patients with a hypertensive emergency.
  11. Perform a relevant focused history and physical for a patient's initial visit with HTN.
  12. Recommend and interpret basic diagnostic and laboratory tests for HTN.
  13. Recommend a specific treatment or medication for an individual patient's HTN understanding the risks and benefits of various treatments.

Recommended study resources:

- Harrison's Principles of Internal Medicine, Chapter 247 Hypertensive Vascular Disease
- Internal Medicine Essentials for Students, Chapter 41
- SIMPLE case 6

**Liver Disease**

Students should be able to understand and discuss:

1. The differential diagnosis and workup of hyperbilirubinemia, conjugated and unconjugated
2. The laboratory evaluation of a patient with suspected liver disease and the interpretation of abnormal serum liver markers (AST, ALT, GGT, alk phos), as well as markers of liver function (bilirubin, albumin, coags)
3. The common causes of liver disease, including steatosis, hepatitis, cirrhosis, infiltrative, and cholestasis
4. The various etiologies of hepatitis and their clinical presentations
5. The causes of cirrhosis, as well as the clinical manifestations and typical clinical course, including hepatic encephalopathy
6. The evaluation and treatment of a patient with spontaneous bacterial peritonitis
7. Indications for paracentesis and ascitic fluid analysis
8. Genetic causes of liver disease (hemochromatosis, Wilson's disease, Gilbert's, alpha-1 antitrypsin deficiency)
9. Indications for Hepatitis A & B vaccination
10. The interpretation of hepatitis serologies
11. The etiologies of and typical features of cholecystitis, cholelithiasis, and ascending cholangitis
12. Indications for hepatobiliary imaging (US, CT, MRI, MRCP, ERCP)

Skills:

1. Describe the key elements of the history and exam that should be included when evaluating a patient with possible liver disease

Recommended study resources:

- Harrison's Principles of Internal Medicine, Chapters 42, 301-308
- Internal Medicine Essentials for Students, Chapters 17, 18, 24, and 25
- SIMPLE case 11 and 36

**Obesity**

Students should be able to understand and discuss:

1. The definitions of obesity and overweight using BMI
2. The etiology of obesity including metabolism, caloric intake, genetic predisposition
3. The differential diagnosis of obesity, including associated conditions (HTN, DM) and endocrine causes of obesity (hypothyroidism, Cushings syndrome)
4. The complications of obesity
5. Treatment options for obesity and how to counsel patients on diet and lifestyle modifications
6. Principles of behavior modification and their role as a physician in helping patients make changes

Recommended study resources:

- Harrison's Principles of Internal Medicine, Chapter 78
- Internal Medicine Essentials for Students, Chapter 35
- SIMPLE case 16

**Pneumonia**

Students should understand and be able to discuss:

1. The etiology, clinical presentation, and treatment of community-acquired, nosocomial, and aspiration pneumonia
2. Recognize the common pathogens of various types of pneumonia in immunocompetent versus immunocompromised patients
3. Radiographic findings of pneumonia
4. The indications for paracentesis and pleural fluid analysis
5. Indications for influenza and pneumococcal vaccination
6. Quality measures of community acquired pneumonia treatment

Skills:

1. Perform a detailed pulmonary examination, identifying signs of consolidation, effusion, and abnormal breath sounds
2. Judicial use of antimicrobial therapy

Recommended study resources:

- Harrison's Principles of Internal Medicine, Chapter 257
- Internal Medicine Essentials for Students, Chapters 55 and 57
- SIMPLE case 22

**Common Rheumatologic Problems**

Students should be able to understand and describe:

1. The approach to the patient with joint pain, including the distinguishing features of intra-articular versus extra-articular sources of pain and inflammatory versus non-inflammatory types of arthritis
2. Recognizing patterns of arthritis and the differential diagnosis for each (monoarticular, oligoarticular, polyarticular; symmetric versus asymmetric; small versus large joints; etc)
3. The indications for arthrocentesis and synovial fluid analysis
4. The management of osteoarthritis
5. The etiology and treatment of septic arthritis
6. The management of gout, including complications and side effects of medications
7. Rheumatologic manifestations of systemic disease (endocrine disorders, etc)

Recommended study resources:

- Harrison's Principles of Internal Medicine, Chapters 331 and 336
- Internal Medicine Essentials for Students, Chapters 88, 91, 92
- SIMPLE cases 31 and 32

### **Smoking Cessation**

Students should be able to understand and describe:

1. The pharmacologic effects of nicotine and withdrawal symptoms
2. Strategies physicians can use to help patients quit smoking
3. The long term risks of smoking and the effects of quitting on future risk

Skills:

3. Be able to counsel patients on smoking cessation

Recommended study resources:

- Harrison's Principles of Internal Medicine, Chapter 395
- Internal Medicine Essentials for Students, Chapter 34

<http://www.livingtobaccofree.com/>

### **Sepsis**

Students should be able to define and understand:

1. The definitions of systemic inflammatory response syndrome (SIRS), sepsis, severe sepsis and septic shock.
2. The epidemiology, common causes and pathophysiology of sepsis
3. The differential diagnosis of shock, including septic shock, cardiogenic, hypovolemic, anaphylactic, neurogenic, obstructive shock and adrenal crisis.
4. The concept of early goal directed therapy and the Surviving Sepsis Campaign.
5. The indications for and interpretation of various diagnostic tests including ABG, lactate, and electrolytes.
6. The indications for and pharmacology of vasopressors used to treat sepsis.

Skills:

1. Be able to assess patient's condition and severity, as well as criteria for ICU admission

Recommended study resources:

- Harrison's Principles of Internal Medicine, Chapter 271
- Internal Medicine Essentials for Students, Chapter 50
- SIMPLE case 21

## **Syncope**

Students should be able to understand and discuss:

1. The clinical features and etiology of syncope.
2. The differential diagnosis of syncope, including cardiac, neurocardiogenic and orthostatic causes.
3. The judicious diagnostic evaluation of a patient with syncope, including the indications for and interpretation of EKG, orthostatics, echocardiogram, stress testing, tilt table testing and other electrophysiologic studies.
4. The management and treatment of syncope based on the individual cause.

### Skills:

1. Be able to perform a focused history and exam evaluating a patient with syncope.
2. Be able to perform and interpret orthostatic vital signs.

### Recommended study resources:

- Harrison's Principles of Internal Medicine, Chapter 20
- Internal Medicine Essentials for Students, Chapter 29
- SIMPLE case 26

## **Thyroid Disease**

Students should be able to understand and discuss:

1. The normal thyroid physiology, including interactions between thyroxine, triiodothyronine, thyroid-stimulating hormone and thyroxine-binding globulin.
2. The epidemiology, etiology and clinical features of hyperthyroidism, hypothyroidism, thyrotoxicosis, and myxedema coma.
3. The laboratory evaluation and interpretation of thyroid disorders.
4. Associated conditions and complications of thyroid disorders, including osteoporosis, cardiac disease, graves ophthalmopathy, etc).
5. The treatment of hypothyroidism and hyperthyroidism, including indications for ablation and surgery.
6. The diagnostic evaluation of a thyroid nodule, including indications for and interpretation of thyroid ultrasound and functional imaging.

### Recommended study resources:

- Harrison's Principles of Internal Medicine, Chapter 341
- Internal Medicine Essentials for Students, Chapter 12

## **Venous Thromboembolism**

Students should be able to understand and describe:

1. Risk factors for DVT/PE, including genetic factors
2. The clinical presentation of and natural course of DVT/PE
3. The differential diagnosis of DVT, including other causes of unilateral leg pain and swelling (lymphedema, cellulitis, venous stasis, postphlebotic syndrome, superficial thrombophlebitis, ruptured popliteal cyst, arterial occlusion).
4. The differential diagnosis of PE (MI/USA, CHF, pericarditis, costochondritis, pulmonary hypertension, etc)

5. The judicious use of labs and studies in the work up of DVT/PE, including the indications for and interpretation of ABG, D-dimer, duplex US, V/Q scan, CTA chest, pulmonary angiography, echocardiogram.
6. Management of DVT/PE, including medications, and indications for IVC filter and thrombolytics
7. Indications for and efficacy of the various methods of DVT prophylaxis

Skills:

1. Be able to assess the severity of the patient and indication for ICU placement

Recommended study resources:

- Harrison's Principles of Internal Medicine, Chapter 262
- Internal Medicine Essentials for Students, Chapter 87
- SIMPLE case 30

**Student goals / objectives during Outpatient block of Internal Medicine**

- Be able to understand and explain the basic principles of screening tests
  - Read Symptoms to Diagnosis, Chapter 2
  - Know the recommended screening tests from the US Preventative Task Force
- Know the general work-up (history, physical, testing, management) for the following common chief complaints in general internal medicine
  1. Diabetes, type 2
  2. HTN
  3. Dyslipidemia
  4. Fatigue
  5. Abdominal pain
  6. Lower back pain
  7. Cough
  8. Joint pain
  9. Dizziness
  10. Headache

Good resources to use for this can be found on the one45 site under Handouts. (JNC 8, ACA Cholesterol guidelines, Symptoms to Diagnosis text). Also, many of the SIMPLE cases are outpatient focused.

- Practice SOAP style notes (either in the EMR or on paper if EMR is not student ready)
- Practice filling out prescriptions

## **Course Methodologies**

You will accomplish the course objectives through a variety of experiences.

- 1) Experiential learning at the bedside, inpatient and outpatient
- 2) Independent reading and online assignments
- 3) Virtual cases (SIMPLE)

Simulated Internal Medicine Patient Learning Experience (SIMPLE) cases are interactive computer based cases. You will learn a lot from these cases but they do take effort (each one should take about 45 minutes to complete.) You must complete at least the following **fifteen** cases (note that underlined cases are more outpatient focused):

Case 1: 49 year old man with chest pain

Case 2: 60-year-old woman with episodic chest discomfort

Case 3: 44-year-old woman with syncope

Case 4: 67-year-old woman with shortness of breath and leg swelling

Case 6: 45 year old male with hypertension

Case 7: 28 year old woman with lightheadedness

Case 10: 48-year-old woman with diarrhea and dizziness

Case 16: 45-year-old man with obesity

Case 19: 42 year old woman with anemia

Case 20: 48 year old woman with HIV

Case 21: 78 year old man with fever, lethargy and anorexia

Case 25: 75 year old woman with altered mental status

Case 27: 65 year old man with bone pain

Case 28: 70 year old man with shortness of breath and leg swelling

Case 33: 49 year old woman with confusion

(7 must be done by the midpoint meeting). You may do additional cases if you find them helpful. The cases can be found at <http://www.med-u.org/> Click on the SIMPLE logo and register using your medicine.nevada.edu address.

Format:

You will be experiencing internal medicine by working alongside a general internist in Elko and Battle Mountain, Nevada. Some of these attendings practice traditional internal medicine meaning they take care of both inpatients and outpatients. You may take call with your attending and take care of his or her patients in the hospital as well as the outpatient setting. You will also see inpatients with the hospitalist in Elko for about two and a half weeks of the clerkship.

It is important that you check with each attending to understand their expectations of the amount of patients you see and the number of notes you write, etc.

There are no formal lectures in Elko but you will be expected to “attend” the CRIM class on the scheduled Tuesdays. You will interact via pictel from Elko.

Duty Hours: As a student, you are not allowed to work more than 80 hours each week (averaged over 4 weeks). In addition, you may not work more than 16 hours consecutively. If you are in jeopardy of violating these duty hours, please discuss with your team and Dr. Calvo right away.

Days Off: You should have at least one 24 period off each week or 4 days off in one month. Let Dr. Calvo know if this is not happening.

### Clerkship Director Meetings:

I will call you at least once during your clerkship to see how things are going.

## Learning Materials

### Recommended Study Resources

#### Texts

†**Harrison's Principles of Internal Medicine** – Classic general text book.

†**Current Medical Diagnosis and Treatment** – General text updated yearly, less pathophysiology.

**Pocket Medicine: The Massachusetts General Hospital Handbook** – excellent handbook for inpatient problems

†**Symptoms to Diagnosis** – symptom based text on how to approach some very common symptoms.

#### Review Books

**Step Up To Medicine** – general review text. Popular with students.

**Internal Medicine ESSENTIALS Text for Clerkship Students** – written by clerkship directors for students. Readable and at student level. This is a companion text to MKSAP for students 5 which is highly recommended.

#### Question banks

**IM Essentials - Questions** - Excellent test bank. Highly recommended study resource. We will loan this to you for the clerkship. You must return it at the end of the clerkship.

**USMLE World Question bank**

#### †On Line Resources- Available through Savitt Library

**Clinical Key** – Brief (but good) descriptions of diseases in a searchable database. Good for quickly looking something up on the wards. Locate under the “Databases” tab at Savitt

**DynaMed** – another brief overview of multiple diseases and conditions with practical information on diagnosis and treatment. Available on smart phones.

**AccessMedicine** – library of online texts including *Harrison's* and *Current Dx and Tx*

**Journal database –Pub Med** – Free access to multiple journals.

*\*Please contact Cory regarding texts you would like to use, we may have some available for loan during your rotation.*

## Assignments

### 1. Patient Encounter Log

You must keep track of your inpatient and outpatient clinical encounters in your patient log using the electronic log format. You can use smart phone or palm

device for entry or any computer with web access. An incomplete or absent log will result in an “incomplete” for the course and possibly a failing grade if the log cannot be reconstructed adequately.

2. Mini CEX (Observed encounters with attending)

During the Internal Medicine clerkship it is mandatory that you complete at least **three** of the Mini – CEX forms with *attendings*. These are directly observed components of patient care such as history taking, physical exam, counseling etc. It is your responsibility to remind your attendings and get these finished.

3. SIMPLE cases: complete the cases as mentioned above.

4. Project ECHO: This is an University of Nevada, Reno School of Medicine program from the Office of Statewide Initiatives. A consultant is present via pictel and rural doctors can discuss pertinent cases with the expert. You will need to prepare for this by finding a relevant case. You will then present the case to the expert, answer any questions and receive some advice which you can take back to your attending. The schedule can be found at <http://medicine.nevada.edu/statewide/echo> Topics include Diabetes and endocrine problems, GI disease, sports medicine, rheumatologic diseases and antibiotic stewardship. **You must complete at least 2 of these conferences with a patient presentation and are encouraged to attend as many as you can.** Notify Jamie Anderson the week before you plan to attend or present a case.

5. Complete all evaluations. It is mandatory that you complete (or suspend if you didn't work with someone) all the evaluations we send you.

6. Complete the Key Features Exam. This exam was designed to test clinical decision making in a more realistic format than a multiple choice test. It is taken online and will be scheduled in the last 2 weeks of your clerkship. It is used as a part of your grade only if you are on the borderline between two grades.

7. Turn in any loaned material (if any).

# Responsibilities

ABSENCES: THIS CLERKSHIP IS A MANDATORY CLERKSHIP AND YOU ARE EXPECTED TO BE PRESENT EVERYDAY EXCEPT FOR ILLNESS OR APPROVED RARE EVENTS (i.e. funeral of family member, childbirth, etc.) THESE EVENTS MUST BE DISCUSSED WITH AND APPROVED BY THE CLERKSHIP DIRECTOR AND EXCUSED ABSENCES ARE AT HIS DISCRETION. UNLESS A STUDENT IS PRESENTING A POSTER OR RESEARCH PAPER, STUDENTS MAY NOT ATTEND SPECIALTY CONFERENCES (i.e. ACOG, ACS)

## **I. Inpatient**

- A. You will be expected to admit patients as directed by the attending physician. You should perform a full H&P and hand this to the attending for feedback. You will follow these patients in the hospital setting until they are discharged or as directed by the attending. You should round on these patients on your own and then later with the attending. You should write daily progress notes on the patients. Obviously any orders that you write must be immediately co-signed by the attending. All patients should be logged into the online log.
- B. During bedside rounds, you should be allowed and encouraged to perform focused physical examinations under the direct observation and guidance of the attending physician. (This is a good chance to get your attending to fill out a CEX form.)

## **II. Outpatient**

- A. You will be seeing patients with the attending at their office. You will be seeing the patient independent of the attending and then presenting the patient to the attending at which point the attending will likely see the patient with you and give feedback. You are encouraged to write H&Ps in the outpt setting as well as S-O-A-P style progress notes. All patients should be logged into the log.
- B. Occasionally we will schedule you to be with a subspecialist (GI or Cardiology) specialist for a day. Be as active as possible in learning these specialties.

## **III. Patient Encounter Log:**

You must keep track of your inpatient and outpatient clinical encounters in your patient log using the e-value electronic log format. You can use a smart phone for entry or any computer with web access. An incomplete or absent log will result in

an “incomplete” for the course and possibly a failing grade if the log cannot be reconstructed adequately.

## Assessment criteria

### I. EVALUATION POLICY

Your performance during the Internal Medicine clerkship will be evaluated by attendings and senior residents you work with, and by a written, standardized shelf examination. Final grades will be honors, high pass or pass. Individual evaluations will be according to a ‘consistently exceeds expectations, meets expectations, sometimes meets expectations, or consistently below expectations system.’

75% of your overall clerkship grade is based on your clinical evaluations (25% for each month), and 25% is based on your shelf exam performance based on percentile rank during the academic quarter that you take the exam.

#### Evaluation Scoring (25% for each month of rotations, 75% total)

For each individual evaluation, points will be assigned to each item and an average score will be calculated. Evaluations will then be weighted by the time spent with each evaluator.

Consistently exceeds expectations	=	4 points
Meets expectations	=	3 points
Sometimes meets expectations	=	2 points
Consistently below expectations	=	1 point

#### Shelf Exam Scoring (25% of final grade)

85 – 100 percentile	Honors	=	4 points
75 – 84 percentile	Honors	=	3.75 points
70 – 74 percentile	Honors	=	3.5
65 – 69 percentile	High Pass	=	3.25 points
51 – 64 percentile	High Pass	=	2.9 points
40 – 50 percentile	Pass	=	2.5 points
16 – 39 percentile	Pass	=	2 points
5 – 15 percentile	Marginal Pass	=	1 point
1 – 4 percentile	Fail	=	must retake

\* must score at least 70% percentile or above to get Honors for clerkship

\* must pass the shelf exam to pass the course

### **Final Grade Calculation**

Honors	=	3.50 – 4.0 points + an NBME exam score of at least 70 <sup>th</sup> percentile
High Pass	=	2.90 – 3.49 points or >3.5 points with a score of <70 <sup>th</sup> percentile on shelf
Pass	=	2.1 – 2.89 points
Fail	=	< 2.1 points or failure of the shelf exam (<5 <sup>th</sup> percentile)

*\*The Clerkship Director reserves the right to adjust your final grade based on factors including overall performance, professionalism, key features exam, and timely completion of assignments.*

To complete the clerkship and receive a grade, you also must

- Turn in all loaned material
- Complete all One45 evaluations
- Complete your patient log
- Complete your required CEXs
- Complete assigned SIMPLE cases
- Complete at least two ECHO case presentations

If these are not completed, you will be given an “incomplete” for the clerkship until they are satisfactorily completed.

### **Failing Grade**

Failure of any single component of the clerkship (including the shelf) will result in failure of the course. If you do not pass the shelf exam (score <5<sup>th</sup> percentile), you may retake it one time. If it is failed a second time, the entire clerkship must be repeated, including a third try at the final exam. If the test is failed the third time you will have failed the clerkship and will be referred to the SPCC for further action, including possible dismissal from medical school. Other grounds for failure would include: not showing up for required lectures and conferences, neglecting patient care responsibilities, or having unprofessional behavior. Marginal performance will result in remedial work. The type and amount will be determined by the Clerkship Director with approval by the Department Chair.

### **Professional Expectations**

What is professionalism? This is a fair question. It is the application of morals and ethics to our profession. You can imagine that people differ on what is professional behavior. Here are some expectations I have of students on this rotation. Remember that it is not enough to have excellent knowledge and problem solving skill if you do not have moral character to go with it. You can fail this rotation by breeching professional expectations even if you ace the rest of the course!

- Honesty – in your interactions with other students, faculty, staff and patients act truthfully
- Integrity – Do what you know is right even if no one is looking.
- Patient confidentiality – always protect your pt by not discussing their case outside of the care team. Destroy documents with patient names. Do not take pictures of patients without permission and only for educational purposes.

- Duty – maintain appropriate doctor – patient relationships with patients. Go the extra mile for your patient. Take ownership of your patient’s care.
- Competence – strive for excellence in knowledge and skills.
- Dress – when polled most patients prefer doctors to dress conservatively. Your appearance is not about you, rather your appearance should serve the interest of your patients. If your dress is a distraction to them you will not be serving your patients.
  - Students should be well groomed and clean at all times. Beards and mustaches should be closely trimmed and neat in appearance.
  - Perfume and cologne are discouraged as many patients have allergies to strong scents.
  - Clothing should not be low cut or expose parts of the body inappropriately.
  - Undergarments should not be exposed.
  - Piercings should be hidden or discrete. Visible naval piercings are inappropriate.
  - Closed top shoes are to be worn at all times (OSHA mandate).
  - Scrubs should not be worn on this rotation since there is no overnight call.
  - You should wear your student white coat and name badge in all patient care activities. Patients and staff should be able to identify you as a student.
- Treat patients and families with dignity and respect.
- Complete assignments and evaluations in a timely manner
- Respond to emails or phone calls in a timely manner

Grading Calculations  
IM Clerkship, Elko

Student: \_\_\_\_\_

Points from evaluations

- Consistently exceeds expectations = 4 points
- Meets expectations = 3 points
- Sometimes meets expectations = 2 points
- Consistently below expectations = 1 point

From Syllabus

75% of grade is evaluation score

25% of grade is shelf score

Mandatory components

- \_\_\_\_ CEX completed (3)
- \_\_\_\_ adequate patient log
- \_\_\_\_ SIMPLE cases completed (15)
- \_\_\_\_ finished evals
- \_\_\_\_ ECHO case presentations (minimum 2)

Attending(s) Evaluations    avg score    x    %time spent    =    total points


AVG points \_\_\_\_\_

Overall points

Attending Eval Avg \_\_\_\_\_ x 0.75 = \_\_\_\_\_ points

Shelf exam score \_\_\_\_\_, percentile \_\_\_\_\_ = \_\_\_\_\_ points x 0.25 = \_\_\_\_\_

Total points \_\_\_\_\_

Clerkship director comments and SIMPLE Key Features Exam

results: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Final Grade : \_\_\_\_\_

## Remediation and other Policies

Absences: This clerkship is a mandatory clerkship and you are expected to be present everyday except for illness or approved rare events (i.e. funeral of family member, childbirth, etc.) These events must be discussed with and approved by the clerkship director and excused absences are at his discretion. Students may not attend specialty conferences (i.e. ACOG, ACS), unless they are presenting a paper or poster at the conference.

### Remediation

Remediation may be necessary if a student receives a marginal evaluation or an evaluator concern appears on an evaluation or if there are noted problems with any component of the evaluative process. The clerkship director will meet with the student to develop a plan for remediation that may include:

1. Additional readings
2. Additional computer cases
3. Additional simulator cases
4. Other individualized work at the discretion of the clerkship director.

If substantial progress is not made the student may be referred to the Student Promotion and Conduct Committee and reports may go to the Associate Dean for Admissions and Student Affairs.

### Academic Success Services

The Learning Specialist can also provide additional resource materials, and assistance with study strategies, time management skills and USMLE and NBME exam preparation. Please visit the following website for more information:

<http://www.medicine.nevada.edu/dept/asa/students/LC/learningcenter.htm>

If you have any questions please contact our Learning Specialist, Ranna Nash by email: [rannan@medicine.nevada.edu](mailto:rannan@medicine.nevada.edu) or telephone: 775-682-8355.

### Academic dishonesty

Students are expected to be familiar with the school's policy regarding academic dishonesty. Statements are in the UNR Catalog at <http://www.unr.edu/stsv/acdispol.html> and University of Nevada, Reno School of Medicine Student Handbook.

### Policy for student non-cognitive criteria governing promotion

[http://www.medicine.nevada.edu/dept/OME/documents/Policy\\_P011Non-CognitiveCriteriaGoverningPromotion.pdf](http://www.medicine.nevada.edu/dept/OME/documents/Policy_P011Non-CognitiveCriteriaGoverningPromotion.pdf)

### Policy for reporting of faculty/ other non-professional behavior

Students should contact their Clerkship Director to notify him of any problems. If the student is not comfortable with this he/she may contact the Dean of Students office to report any issues.

### Statement of Disability Services

The School of Medicine retains the right to review and approve or decline any or all requests for accommodation. If you have a disability that necessitates accommodation to meet the School of Medicine's Essential Functions, then you must provide, at your own expense, appropriate documentation from a qualified professional describing the disability and setting forth any reasonable accommodations necessary to ensure that you are able to meet the essential functions.

### Adjunct Syllabus

Please refer to the CDIM (Clerkship Directors in Internal Medicine) website for an additional syllabus and clerkship expectations.

[www.im.org/Resources/Education/Students/Learning/Documents/OnlineCDIMCurriculum.pdf](http://www.im.org/Resources/Education/Students/Learning/Documents/OnlineCDIMCurriculum.pdf)