

Qatar University College of Pharmacy Advanced Clinical Internship HEART FAILURE CLINIC

DESCRIPTION

The Heart Failure Clinic Advanced Clinical Internship is a rotation in the Doctor of Pharmacy (PharmD) degree program focusing on heart failure management. During this internship, the PharmD student will receive training in an ambulatory care setting staffed by pharmacists, nurses, physicians and other health care professionals who form the interprofessional team responsible for collaborative care. The PharmD student will have opportunity to integrate with the health care team and provide pharmaceutical care to assigned patients. During this internship, the PharmD student will be exposed to the institutional management of heart failure that will help to enhance their therapeutic knowledge and clinical expertise.

GOALS

The goal of the Qatar University Doctor of Pharmacy (PharmD) degree program is to graduate medication therapy experts. To achieve this goal, this internship will provide the opportunity to integrate knowledge, skills and attitudes from seven educational outcomes:

1. **Care Provider** The PharmD student will use their knowledge, skills and professional judgment to provide pharmaceutical care and to facilitate management of patient's medication and overall health needs.
2. **Communicator:** The PharmD student will communicate with diverse audiences, using a variety of strategies that take into account the situation, intended outcomes of the communication and the target audience.
3. **Collaborator:** The PharmD student will work collaboratively with teams to provide effective, quality health care and to fulfill their professional obligations to the community and society at large.
4. **Manager:** The PharmD student will use their management skills in daily practice to optimize care of patients, to ensure the safe and effective distribution of medications, and to make efficient use of health resources.
5. **Advocate:** The PharmD student will use their expertise and influence to advance the health and well-being of individual patients, communities, and populations, and to support pharmacist's professional roles
6. **Scholar:** The PharmD student will possess and apply core knowledge and skills required to be a medication therapy expert, and are able to master, generate, interpret, and disseminate pharmaceutical and pharmacy practice knowledge.
7. **Professional:** The PharmD student will honour their roles as self-regulated professionals through both individual patient care and fulfillment of their professional obligations to the profession, the community, and society at large.

These educational outcomes will be achieved at a level of performance that is higher than a BSc (Pharm) graduate^{1,2,3}.

OBJECTIVES

Upon completion of this 4-week internship, the PharmD student will:

1. Demonstrate the ability to obtain a complete medication history making use of all available and appropriate resources, including the patient, medical record, family members, physician and other members of the health care team;
2. Demonstrate the ability to evaluate the appropriateness of a patient's drug therapy through literature review, patient interviews, physical examination, retrieval of necessary information from the health record, interpretation of laboratory studies and diagnostic investigations, and discussion with other health care professionals;
3. Demonstrate the proficiency in practicing with the pharmaceutical care model, including the ability to:
 - i. Identify and state actual or potential drug-related problems (DRP);
 - ii. Describe desired therapeutic outcomes;
 - iii. Compile a list of therapeutic alternatives;
 - iv. Choose and justify patient-specific therapy recommendations;
 - v. Develop and execute a monitoring plan for efficacy and safety;
4. Demonstrate the ability to efficiently, accurately, and completely document patient-related concerns, progress, and recommendations in a health record;
5. Demonstrate the ability to provide clinically useful therapeutic information to health professionals;
6. Demonstrate the ability to discuss and therapeutic controversies with the preceptor and other members of the health care team. The framework for the discussions will be knowledge of relevant evidence, critical appraisal of evidence, and appropriate application of evidence to the care of specific patients;
7. Identify and report a suspected adverse drug reaction (where applicable);
8. Demonstrate the ability to access and use available clinical resources effectively;
9. Demonstrate competence in discussing the pathophysiology, clinical features, and therapeutics (in detail, including therapeutic controversies) of heart failure with a focus on the following:
 - i. Reduced left ventricular ejection fraction
 - ii. Preserved left ventricular ejection fraction
 - iii. Acute decompensated heart failure
 - iv. Concomitant disorders (arrhythmias, HTN, CAD, DM)
 - v. Devices and surgical interventions (ICD, CRT, LVAD)
 - vi. Special populations (African Americans, women, geriatrics)
 - vii. Others that are prevalent at the internship site and as assigned by the preceptor
10. Demonstrate the ability to work effectively in an interprofessional environment towards the delivery of collaborative care.
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PERSONAL OBJECTIVES

The PharmD student will identify at least 3 of their own objectives for the internship based upon their personally determined learning needs. These will be assessed (student self-reflection and preceptor feedback) at evaluation points during the internship.

REQUIRED ACTIVITIES

During this 4-week advanced clinical internship, the PharmD student will:

1. Provide pharmaceutical care to the patients in the patient care area as per the objectives stated above. This involves daily patient evaluation for efficacy and toxicity of existing therapy as well as detecting and resolving new potential DRPs;
2. Attend any interprofessional patient care rounds when they occur and assist in the initiation and continuation of appropriate therapy;
3. Provide medication counseling and perform medication histories on all patients under her care when appropriate;
4. Provide discharge counseling to all patients who require it and liaise with community practitioners whenever potentially beneficial;
5. Attend departmental education sessions whenever feasible;
6. Prepare two topics per week for discussion with preceptor. These can include specific rotation topics as well as topics selected by the preceptor;
7. Meet daily with preceptor to discuss patients being followed, issues of interest, therapeutic controversies, ongoing evaluation, specific topics;
8. Prepare and conduct one journal club for the pharmacy department. If two students are sharing the rotation, they are expected to jointly prepare and deliver the journal club (not each make 1 separate);
9. Prepare and conduct one presentation. This could be a patient case presentation to the pharmacy department or an in-service to nursing staff, physicians, or other allied health care members. If two students are sharing the rotation, they are expected to jointly make the presentation (not each make 1 separate);
10. Any other activity as pre-approved by preceptor and the QU PharmD Director.

POLICIES, PROCEDURES AND RESPONSIBILITIES

During the 4-week advanced clinical internship, the PharmD student will comply with the internship policies and procedures, and the student responsibilities as outlined on the program website at www.qu.edu.qa/pharmacy.

During the 4-week advanced clinical internship, the preceptor will comply with the internship policies and procedures as outlined at www.qu.edu.qa/pharmacy.

GENERAL REFERENCES

1. Association of Faculties of Pharmacy of Canada. Educational Outcomes for First Professional Degree Programs in Pharmacy (Entry-to Practice Pharmacy Programs) in Canada. June 3, 2010.
2. Association of Faculties of Pharmacy of Canada. Educational Outcomes for a Post-Baccalaureate Doctor of Pharmacy Graduate in Canada. June 12, 1999.
3. Association of Faculties of Pharmacy of Canada. Addendum C to CCAPP 2006 Standards. Post-baccalaureate Doctor of Pharmacy Degree Additional Accreditation Standards and Guideline Requirements.

DISCUSSION TOPICS AND RESOURCES

1. Heart Failure Guidelines

- Acute Heart Failure Syndromes: Emergency Department Presentation, Treatment, and Disposition: Current Approaches and Future Aims. A Scientific Statement From the American Heart Association. *Circulation* 2010;122;1975-1996.
- Guideline Committee for the HFSA. Executive Summary: HFSA 2010 Comprehensive Heart Failure Practice Guideline. *J Cardiac Failure* 2010; 16 (6):475-539.
- Jessup M, Abraham WT, Casey DE, et al. 2009 Focused Update: ACCF/AHA Guidelines for the Diagnosis and Management of Heart Failure in the Adults: A report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *Circulation* 2009;119;1977-2016. Available at <http://circ.ahajournals.org/cgi/content/full/119/14/1977>
- ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure 2012. *European Heart Journal* (2012) 33, 1787–1847.
- The 2012 Canadian Cardiovascular Society Heart Failure Management Guidelines Update: Focus on Acute and Chronic Heart Failure. *Canadian Journal of Cardiology* 29 (2013) 168–181.

2. Heart Failure Landmark Trials

- Ace inhibitors
 - Effect of enalapril on survival in patients with reduced left ventricular ejection fractions and congestive heart failure. The SOLVD Investigators. *N Engl J Med*. 1991 Aug 1;325(5):293-302.
 - Comparative effects of low and high doses of the angiotensin converting enzyme inhibitor, lisinopril, on morbidity and mortality in chronic heart failure. ATLAS Study Group. *Circulation* 1999 Dec 7;100:2312-8
 - Effect of ramipril on mortality and morbidity of survivors of acute myocardial infarction with clinical evidence of heart failure. The Acute Infarction Ramipril Efficacy (AIRE) Study Investigators. *Lancet*. 1993 Oct 2;342(8875):821-8.
- Angiotensin receptor blockers
 - Effects of candesartan in patients with chronic heart failure and reduced left-ventricular systolic function intolerant to angiotensin-converting-enzyme inhibitors: the CHARM-Alternative trial. *Lancet* 2003; 362: 772–776
 - A Randomized Trial of the Angiotensin-Receptor Blocker Valsartan in Chronic Heart Failure. *N Engl J Med* 2001; 345:1667-1675
- Beta blockers
 - The Cardiac Insufficiency Bisoprolol Study II (CIBIS-II): a randomised trial. *Lancet*. 1999 Jan 2;353(9146):9-13.
 - Effect of Carvedilol on Survival in Severe Chronic Heart Failure. *N Engl J Med* 2001; 344:1651-1658
 - Effect of metoprolol CR/XL in chronic heart failure: Metoprolol CR/XL Randomised Intervention Trial in Congestive Heart Failure (MERIT-HF). *Lancet*. 1999 Jun 12;353(9169):2001-7.

- Comparison of carvedilol and metoprolol on clinical outcomes in patients with chronic heart failure in the Carvedilol Or Metoprolol European Trial (COMET): randomised controlled trial. *Lancet*. 2003 Jul 5;362(9377):7-13.
- Aldosterone antagonists
 - The effect of spironolactone on morbidity and mortality in patients with severe heart failure. *New Engl J Med* 1999;341:709-17
 - Eplerenone in Patients with Systolic Heart Failure and Mild Symptoms. *N Engl J Med* 2011; 346;1:11-21
 - Eplerenone, a Selective Aldosterone Blocker, in Patients with Left Ventricular Dysfunction after Myocardial Infarction. *N Engl J Med* 2003; 348:1309-1321
- Digoxin
 - The effect of digoxin on mortality and morbidity in patients with heart failure. *N Engl J Med*. 1997 Feb 20;336(8):525-33.
- Nitrates/Hydralazine
 - Combination of isosorbide dinitrate and hydralazine in blacks with heart failure. *N Engl J Med*. 2004 Nov 11;351(20):2049-57. Epub 2004 Nov 8.

3. Heart Failure Devices

- Implantable cardioverter defibrillators and cardiac resynchronisation therapy. *Lancet* 2011; 378: 722–30
- Devices in Heart Failure. *Tex Heart Inst J* 2008;35(2):166-73
- Device Therapy for Heart Failure. *Am J Cardiol* 2003;91(suppl):53D–59D
- Ventricular Assist Devices: Important Information for Patients and Families. *Circulation*. 2011;124:e305-e311