UC San Diego
SKAGGS SCHOOL OF PHARMACY AND PHARMACEUTICAL SCIENCES

**APPE Rotation Description**

# Diabetes Self-Management Clinic

## GENERAL INTRODUCTION

The UCSD Diabetes Self-Management Clinic is a multidisciplinary outpatient service that focuses on empowering UCSD patients with pre-diabetes or diabetes to understand and self-manage their condition.

## Preceptor Contact Information

### Tuesday Clinics

Renu F. Singh, PharmD, BCACP, CDE
HS Clinical Professor, UCSD Skaggs School of Pharmacy and Pharmaceutical Sciences
UCSD Diabetes Self-Management Clinic Co-Founder and Educator
rfsingh@ucsd.edu

### Thursday, Friday Clinics

Panteha (Pawny) Kelly, BS.Pharm, RPh, CDE
Clinical Pharmacist Specialist, Department of Pharmacy, UCSD
HS Assistant Clinical Professor NS, UCSD Skaggs School of Pharmacy and Pharmaceutical Sciences
UCSD Diabetes Self-Management Clinic Coordinator, Co-Founder and Educator
pdkelly@ucsd.edu

## INTRODUCTION TO THE ROTATION- 6 Week Rotation

The UCSD Diabetes Self-Management clinic operates from three different locations at UCSD Medical Center Health System, located within primary care practices:
Tuesdays: 4th and Lewis Clinics, Hillcrest, and Scripps Ranch Family Medicine Clinic (alternate Tuesdays)
Thursdays: La Jolla Internal Medicine Clinic
Fridays: 4th and Lewis Clinics, Hillcrest

The clinic offers two core diabetes education group classes for all patients referred to the service. Each class is held every 1-2 weeks. The clinics' education sessions follow the American Association of Diabetes Educators (AADE) curriculum and focuses on seven self-care behaviors; 1) Being active, 2) Healthy Eating, 3) Taking Medications, 4) Monitoring of Blood Glucose, 5) Problem Solving (especially for blood glucose: high and low levels and sick days), 6) Reducing Risks of Diabetes Complications and 7) Living with Diabetes (psychological adaptation and resources). Patients are seen either individually or within a two hour group class. Patients are encouraged to attend both education classes to complete the program. Individualized sessions are scheduled for patients with special needs.

Patients may also be referred to a dietician diabetes educator within the practice for individualized nutrition planning and

Patients are referred to this practice from UCSD providers. The patient population are adult men and women with pre-diabetes (approx 20%), diabetes mellitus type 1 (approx 10%) or diabetes mellitus type 2 (approx 70%). In addition, many of the patients have multiple co-existing chronic disease states, including HTN, hyperlipidemia, obesity, sleep apnea, HIV, fatty liver, osteoarthritis, chronic kidney disease, sleep apnea, heart disease, heart failure, COPD, asthma, hepatitis C, cancer, liver disease, organ transplant. Many patients will also have diabetes–related complications such as peripheral or autonomic neuropathy, retinopathy and/or nephropathy.

Patients seen at all locations are from diverse socioeconomic backgrounds, various ethnic backgrounds (Hispanic, African American, Pacific Islander, Asian, Middle Eastern, Caucasian), may have disabilities (wheelchair bound, hearing impaired, blind, cognitive impairment), and may or may not have comprehensive health insurance. Some patients will have low literacy levels and some will require foreign language or American sign language (ASL) interpreters. These factors will all need to be considered when interviewing and educating patients and developing patient-specific care plans for each patient.

Students will provide teaching on a variety of diabetes-related topics to patients with diabetes or pre-diabetes and their caregivers/families in a group and/or individual setting. The student will review each patient's medical chart prior to each clinic session and provide medication reviews, ensure health maintenance related to diabetes are up-to-date (i.e. eye exam, foot exams, immunizations) and provide recommendations to the referring provider, as needed, in the electronic medical record system, EPIC. The student will also identify patients who need additional health-related assistance (e.g. tobacco cessation, medication payment difficulty) and will work closely with the patient, preceptor and referring provider to address these issues.

Students will have access to EPIC, which is UCSD's electronic medical record (EMR). Students will have access to contemporary online information resources, including Clinical Pharmacology Online, Micromedex, Natural Medicines Database and Up-To-Date.

**ORIENTATION TO THE ROTATION**

1. Prior to clinic starting, students are to have reviewed all patient medical records for that clinic day. Students can access the electronic medical record, EPIC, either from UCSD Medical Center computers or remotely. For instructions on how to do this, see Appendix 1. The daily clinic schedule may be found on EPIC under:
    - Tuesdays: LWC PHARM DIABETES EDU
    - Thursdays: LIM PHARM DIABETES EDU
    - Fridays: LWC PHARM DIABETES EDU

2. Students should arrive no later than 8.30am on the first day of the rotation to meet with the preceptor

3. Preceptor will orient the student to the layout of the clinic and introduce them to key staff members
4. Preceptor and student will discuss student's personal goals as it relates to the rotation
5. The preceptor will review the rotation description, including goals and objectives, APPE activities, assignments, required readings, clinic procedures and hours, and expectations of rotation
6. Students should wear professional attire under their white lab coat. Their name badge must be worn at all times
7. Parking for Lewis street clinic:
    - Students may park in the Bachman parking structure and purchase a parking permit: http://blink.ucsd.edu/facilities/transportation/permits/buy.html
    - From this structure the clinic is a 5 minute walk. Walk south until you reach 4th street. Turn left and the building will be on your left in 100 meters.
8. Parking for La Jolla clinic
    - Students should park at UCSD campus and walk across the footbridge from the SSPPS to the clinic. It is a 10 minute walk from the SSPPS

**Clinic Schedule**

| Preceptor | Days | Location/Address | Hours |
|---|---|---|---|
| Renu Singh | Tuesday 1st and 3rd of every month | UCSD Medical Clinics and Offices, 330 Lewis Street, Suite, 200, San Diego, 92103 | 8.30am - 5:00pm |
| Panteha Kelly | Thursday | UCSD Internal Medicine Clinic, 8939 Via La Jolla Drive, La Jolla CA 92037 | 8.30am - 5:00pm |
| Panteha Kelly | Friday | UCSD Medical Clinics and Offices, 330 Lewis Street, Suite, 200, San Diego, 92103 | 8.30am - 5:00pm |

**GOALS AND OBJECTIVES**

General objectives can be found in the APPE Ambulatory Care syllabus located on the SSPPS website: *http://pharmacy.ucsd.edu/faculty/experiential.shtml*

Site Specific Objectives:

1. Demonstrate adequate data collection and interpretive skills such as obtaining patient information, prioritizing and researching patient problems, presenting patient, and monitoring patient data.
2. Develop patient-specific drug therapy by applying PK and/or pharmacoeconomic principles, as appropriate, and evaluating possible drug interactions, adverse events, medication errors and response to therapy.
3. Provide effective verbal and written patient education or communication to a diverse patient population

4. Demonstrate ethical and professional behavior in all practice activities, including interactions with patients, caregivers, peers, the preceptor, and other health care providers that are cooperative, collaborative, communicative and respectful.
5. Complete medication reconciliation for diabetes medications for patients seen in clinic in addition to clinic notes in the EMR for all patients seen in clinic using templates provided to ensure key areas are addressed for all patients
6. Be organized, timely and thorough in performance of all clinical functions
7. Provide patient-specific recommendations for prescription and nonprescription medications and devices, dietary supplements, diet, nutrition, traditional nondrug therapies, complementary and alternative therapies, and preventive procedures
8. Identify, evaluate, and communicate the appropriateness of specific therapeutic agents, dosing regimens, dosage forms, routes of administration, and delivery systems.

**APPE ACTIVITIES**

**1) Direct Patient Care Activities**

1. Review patient medical records in the electronic medical record (EMR) prior to each clinic day and collect pertinent and thorough information on each patient as it relates to diabetes and its associated conditions using the Patient Summary for Presentation to Preceptor form (See Appendix 2).
2. Evaluate each patient's medical record for appropriate diabetes-related drug therapy, dose, potential drug interactions, adverse drug events, medication errors and response to therapy, taking into consideration patient-specific factors, including age of patient, economic considerations (self-pay versus tiered co-pays for health insurances)
3. Present patients daily to the preceptor in a systematic and organized manner prior to clinic starting
4. Ensure diabetes medication reconciliation is completed for all patients seen in clinic
5. Conduct interviews individually with patients, using a empathetic and non-judgmental manner, to motivate and provide relevant lifestyle coaching to patients
6. Assist with teaching of group diabetes education classes to patients with diabetes or pre-diabetes and their caregivers, including topics on management and prevention of hypoglycemia, complications of diabetes, and/or medications used in diabetes
7. Interpret home blood glucose monitoring logs and provide recommendations to achieve optimal glycemic targets
8. Provide basal and bolus insulin dose adjustment to patients
9. Provide appropriate lifestyle counseling to diabetes patients, including reading a nutritional label, carbohydrate counting, exercise counseling, weight loss strategies
10. Monitor patients appropriately for glycemic control
11. Complete patient clinic notes on all patients seen in clinic before the end of each clinic day
12. Provide telephone follow-up to at least one patient seen in clinic, and document in the EMR

**2) Non-Direct Patient Care Activities**

1. Assist with assessing and tracking clinical and behavioral outcomes and health maintenance requirements, including A1c, BMI, goals that patients set for themselves during class, annual dilated eye and foot exams

**3) Interprofessional Interaction and Practice**

1. Communicate clinic notes and recommendations to referring providers on drug therapy changes, lab tests and pertinent diabetes tests/referrals

**4) Medication Dispensing, Distribution, Administration, and Systems Administration**

1. Demonstrate how to instruct a patient on several key products and devices, including (but not limited to):
    I. Glucometer use and testing
    II. Initiating insulin administration, including vial and syringe, mixing NPH and regular insulin, and insulin pens
    III. Appropriate storage and expiration dates of insulins, glucometers and test-strips and appropriate disposal of sharps
    IV. Injectable GLP-1 agonists, such as Byetta, Victoza, Bydureon, Trulicity or Tanzeum
    V. Initiating a VGO insulin delivery system
    VI. Glucagon administration

**5) Professional Development**

1. Research and provide drug information queries, as requested, from patients, providers or the preceptor
2. Each student will present a 15-20 minute case presentation to the preceptor by the end of the rotation on one patient seen in clinic. In addition to presenting the case with pertinent history and labs, the student should address a patient-specific diabetes-related problem encountered by the patient and research it appropriately. A 1-2 page handout should be provided to the preceptor on the day of the presentation and it should contain appropriate references.
3. Complete quizzes and cases as provided by the preceptor and discuss with the preceptor weekly

**EVALUATION**

The student will complete three evaluations throughout this experience:
1) a Midpoint/Formative Self-Evaluation, 2) a Preceptor Evaluation and 3) a Site Evaluation. The preceptor, in addition to commenting/signing off on the student Midpoint/Formative Self-Evaluation, will complete a Summative Evaluation at the end of the rotation. Students may be evaluated at any other time at the discretion of the preceptor. Preceptors may evaluate students more frequently, so that the student is informed of areas requiring improvement early in the rotation. The primary preceptor should obtain feedback from all team members as well as any patient comments.

**SUPPLEMENTARY MATERIAL**

Students should read the Required Readings and be able to discuss the following topics:

1. Diagnosing diabetes and pre-diabetes
2. Blood glucose goals for diabetes (fasting and before meals, BG, post-prandial, bedtime, A1c)

3. Starting doses, and maximum doses of diabetes medications
4. Common side effects and monitoring parameters for all diabetes medications
5. Which diabetes medication should be given first line, second line, etc and what are the major pros and cons for each medication
6. Efficacy and side effect comparison between the GLP-1 agonists
7. Pharmacokinetic profiles of the long acting, intermediate, short and rapid acting insulins
8. How to initiate a basal insulin in a patient with T2DM
9. How to calculate an insulin sensitivity factor (ISF) using total daily dose of insulin (TDD)
10. How to calculate a carb ratio (CR) using total daily dose of insulin (TDD)

**Required Readings**

1. American Diabetes Association. Standards of Medical Care in Diabetes-2016. Position Statement. Diabetes Care 2016. Available at: http://care.diabetesjournals.org/site/misc/2016-Standards-of-Care.pdf (updated annually every January)

2. AACE/ACE Comprehensive Diabetes Management Algorithm 2015 Available at: https://www.aace.com/publications/algorithm

3. AACE/ACE Clinical Practice Guidelines for Developing a Diabetes Mellitus Comprehensive Care Plan-2015. Available at: https://www.aace.com/files/dm-guidelines-ccp.pdf

4. 2013 ACC/AHA Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic cardiovascular Risk in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. J Am Coll Cardiol. 2014 Jul 1;63(25 Pt B):2889-934. doi: 10.1016/j.jacc.2013.11.002. Epub 2013 Nov 12. Available at: http://www.sciencedirect.com/science/article/pii/S0735109713060282

5. 2014 Evidence Based Guideline for the Management of High Blood Pressure in Adults (JNC 8). Available at: http://jama.jamanetwork.com/article.aspx?articleid=1791497

6. Comparison of GLP-1 Agonists. Pharmacist's Letter. Document #301204 December 2014 (available from preceptor)

**Other Student Resources**

1. Diabetes Self-Management Clinic website: http://health.ucsd.edu/specialties/endo/diabetes/Pages/diabetes-self-management-clinic.asp
2. Key Diabetes journals: Diabetes Care, The Diabetes Educator
3. Key Diabetes websites:
    i. American Diabetes Association (ADA)

1. Diabetes.org

ii. American Association of Diabetes Educators (AADE)
    1. Diabeteseducator.org

iii. National Certification Board for Diabetes Educators (NCBDE)
    1. ncbde.org

**Accessing Medical Records Prior to the First Day in a UCSD Clinic**

As a pharmacy student at the SSPPS, you are able to access UCSD's electronic medical record system, EPIC, remotely, from your computer or laptop. This is through the Clinical Web Portal.

1. Compatible with only some browsers (e.g. Internet Explorer), not Firefox
2. Accessing the Clinical Web Portal
   a) Gain access to:
      - EPIC
        - Electronic Medical Records
        - BML Online Clinical Library

   b) Download Citrix onto your computer:
      - *For Windows PC:* http://www.citrix.com/English/ss/downloads/details.asp?downloadId=1681207&productId=186&c1=sot2755
      - *For MACs:*
      - http://www.citrix.com/English/ss/downloads/details.asp?downloadId=3247&productId=186&cI=pov1349807
      - http://www.citrix.com/English/ss/downloads/details.asp?downloadId=20731&productId=186&cI=pov1349807

   c) Log onto Clinical Web Portal
      - https://cwp.ucsd.edu
      - Username/Password is your UCSD email username/password

   d) Log onto Epic
      - Username/Password is your Epic username/password created at your student computer training secession

   e) If any other assistance is needed contact UCSD Health System Technical Support (619) 543-7474

Appendix 2

Diabetes Self –Management Clinic Date:_____

**Patient Summary for Presentation to Preceptor**

| **Name, Age/Type of DM/yrs** | **Last A1c / Last BMI** | **Creat / Microalb creat ratio** | **Diabetes meds and dose/ start dates (if recent)** | **Referral reason; PMH; PCP or Endo note from last visit(s); date of last dilated eye exam and foot exam** | **Other pertinent meds (HTN, HLD, PN, depression, etc)** | **Comments/ Recommendations** |
|---|---|---|---|---|---|---|
| **Example:** Elliot Brown; 43 yo AA man with T2DM for 6 years | 2/7/15 A1c 13.7 (previously 8.7 on 9/1/14)<br>3/30/15 BMI 29.4 (increased from BMI 28.1 on 9/1/14) | 2/7/15 sCr 0.71<br>_____<br>Microalb/ creat ratio: 2/7/15 < 1.2 | -metformin 500mg BID<br>-Lantus 20 units QHS (since 1/7/15)<br>-Humalog 5 units TID ac with meals (since 2/7/15) | **Referral Reason:** Poorly controlled DM;<br>**PMH:** HTN (last BP 152/92), HLD (2/7/15 TChol 200, LDL 148, TG 218, HDL 40), HIV, PN, sleep apnea (on CPAP), spinal stenosis<br>**Notes from last PCP visit** (2/7/15): h/o non-adherence with meds, stressful home situation<br>**Foot exam:** 2/7/15: has PN<br>**Eye exam:** Due (none on file) | -Lisinopril 40mg daily<br>-atorvastatin 10mg po daily<br>-Neurontin 300mg BID<br>-Ibuprofen 800mg TID prn | - check why metformin dose is so low<br>-check med adherence<br>- needs referral for eye exam<br>- repeat A1c due |
| | | | | | | |
| | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | |

Diabetes Self –Management Clinic Date:_____

**Patient Summary for Presentation to Preceptor**

| **Name, Age/Type of DM/yrs** | **Last A1c / Last BMI** | **Creat / Microalb creat ratio** | **Diabetes meds and dose/ start dates (if recent)** | **Referral reason; PMH; PCP or Endo note from last visit(s); date of last dilated eye exam and foot exam** | **Other pertinent meds (HTN, HLD, PN, depression, etc)** | **Comments/ Recommendations** |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | |