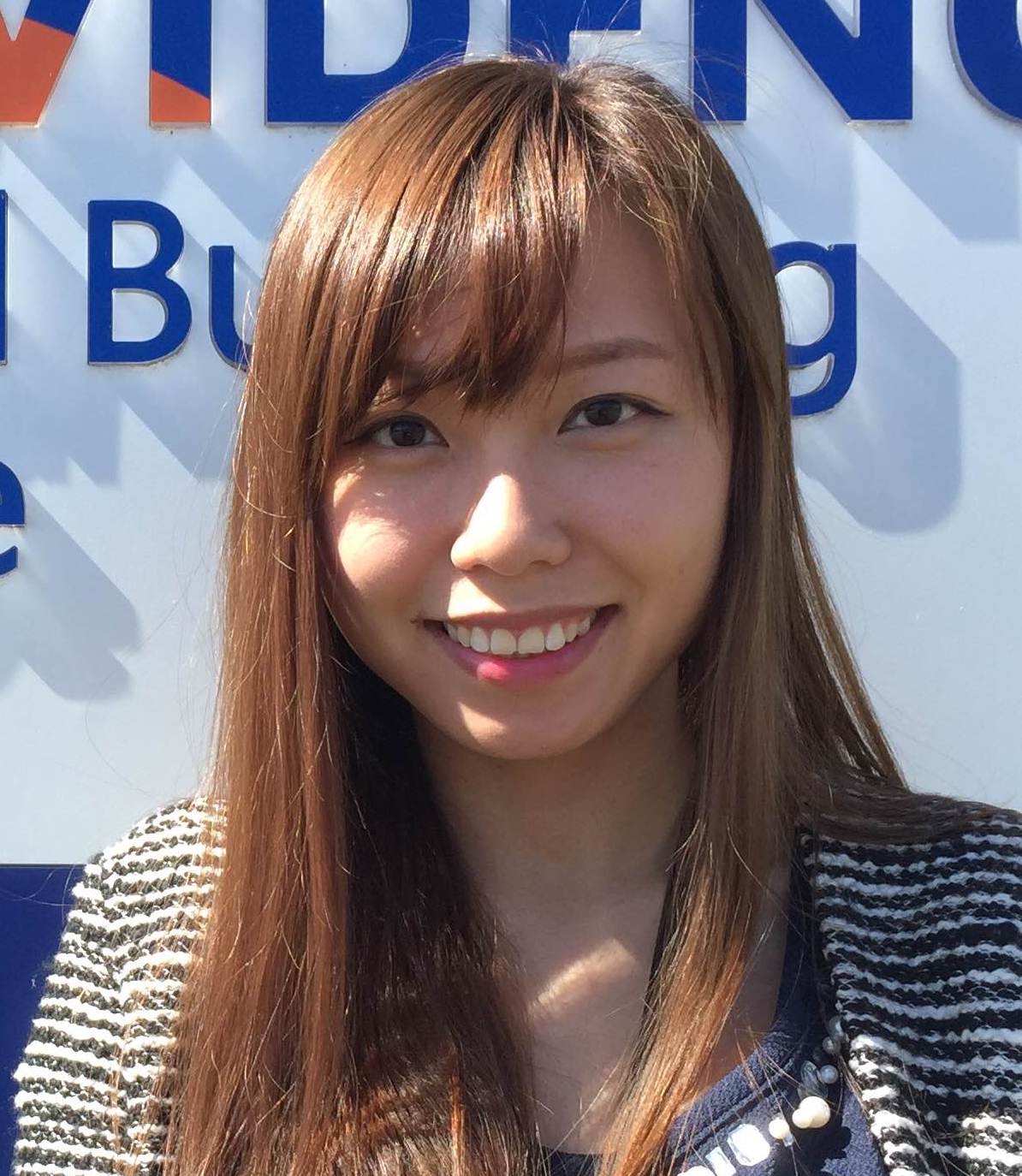
 The Resident Star

By The University of Washington

Community Pharmacy Residents

November 2015



Shirley Chong, PharmD

**Resident Clinical Service**

**Anticoagulation Management**By Shirley Chong, PharmD (Providence Pharmacy Monroe)

One of the clinical services that is offered at Providence is anticoagulation management (ACC). As pharmacy residents, we staff the ACC on Mondays and Wednesdays and have the opportunity to provide individualized patient-centered care aligning with the objectives of our ambulatory care/community residency.

On a typical day, we normally see between 20-30 patients per day in 15-minute appointments for return patients and 60-minute appointment for new patients. The majority of our patients are on warfarin; however, we also provide occasional teaching for direct oral anticoagulants like Xarelto (rivaroxaban).

During each return patient appointment, we assess patients for bleeding/bruising and interview them for changes in medications, diet, lifestyle, and various other factors that affect warfarin serum levels. Based on the results from the point of care INR machine, we adjust warfarin dosing for each patient and provide additional counseling as necessary to ensure safe and appropriate use.

The new patient appointments include both warfarin dose adjustments and detailed patient education on topics such as indications for warfarin use, mechanism of action, drug and food interactions, side effects, and self-monitoring tips for signs and symptoms of clots and bleeding. In the past month, we started piloting a warfarin shared medical appointment (SMA) in order to promote more interactive education sessions for patients and increase workflow efficiency in the ACC. Although we have only had one session and are still working out the details, we are excited about this new addition to the clinical service and hope it will lead to even better quality patient care and outcomes.

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Laura Hart, PharmD

**Resident Clinical Service**

**Hearthstone Retirement Community**By Laura Hart, PharmD (PGY2 Geriatric Pharmacy Resident, UWSOP)

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Aspart of my PGY2 Geriatric Pharmacy Residency training, I spend one-half day per week at the Hearthstone Retirement Community, a continuing care retirement community where the University of Washington School of Pharmacy (UWSOP) has an established collaboration and teaching program. **Continued on next page**

On August 13, 2014, the US Food & Drug Administration approved Belsomra (suvorexant) for treatment of insomnia characterized by difficulties in sleep onset and/or sleep maintenance. 1 Unlike traditional sleep aids such as benzodiazepines and “Z-drugs” which activate inhibitory GABA receptors to promote sleep, suvorexant works in a novel mechanism by binding and inhibiting excitatory orexin receptors (OX1R and OX2R) that promote alertness. 2

The initial dose of suvorexant is 10 mg by mouth once daily 30 minutes prior to bedtime. Patients may increase to the max dose of 20 mg once daily if the 10 mg dose is well tolerated but not effective. No adjustment is necessary for renal impairment, hepatic impairment unless severe, or for geriatric patients. However, suvorexant is a CYP3A substrate so a lower dose of 5 mg is usually started for use with CYP3A inhibitors.2

Suvorexant is contraindicated in narcolepsy and cautioned with other CNS depressants such as opioids, tricyclic antidepressants, and alcohol. Common side effects include drowsiness, headache, and dizziness. Other possible side effects include abnormal thinking/behavioral changes, sleep paralysis, complex sleep behaviors, and worsening of depression. As dependence and abuse is possible, it is currently classified as a C-IV controlled substance.2

The efficacy of suvorexant was evaluated in three clinical trials. FDA approval was based off two similarly designed 3-month, randomized, double-blind, placebo-controlled, parallel group studies. Patients in the studies were stratified by age, and either treated to suvorexant 20 mg or placebo for non-elderly adults, or suvorexant 15 mg or placebo for patients of age ≥65 years. Sleep latency and maintenance were measured both objectively by polysomnographic assessment and subjectively by patient electronic diaries. Based on the study results, investigators found that suvorexant improved both sleep latency and maintenancy and was generally safe and well tolerated (see Table).3, 4 The third clinical trial was a 1-month crossover study in which non-elderly adults were treated with either placebo or suvorexant 10 mg, 20 mg, 40 mg, or 80 mg. Sleep latency and sleep maintenancy were measured objectively by polysomnography and investigators concluded that suvorexant 10 mg and 20 mg were provided statistically significant reductions in sleep onset and improvement in total sleep time.5

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**Drug Information**

**Belsomra® (suvorexant)**By Shirley Chong, PharmD (Providence Pharmacy Monroe)

**Hearthstone Retirement Community continued**:

Joy and Elmer Plein developed this teaching program in 1989. I had the opportunity to complete an advanced pharmacy practice experience (APPE) rotation with the Hearthstone during my fourth year of the PharmD program at UWSOP as part of the Plein Certificate in Geriatric Pharmacy. It has been a wonderful experience to return to this setting in the capacity of my pharmacy residency training.

At the Hearthstone, I work with pharmacist and Associate Professor Karan Dawson to provide clinical pharmacy services. These services range from consulting with nursing staff in the skilled nursing facility to provide recommendations to optimize drug therapy, to responding to drug information requests from independent living residents who drop in to see us in the pharmacy office. Each day provides new and exciting challenges. In addition, the Hearthstone recently implemented a clinic run by ARNPs, and I look forward to exploring potential opportunities for collaboration. I should also mention that the Hearthstone continues to represent an APPE training site for students in the PharmD program, so I have also enjoyed having the opportunity to co-precept students.

**Belsomra® (suvorexant) continued:**

Despite study data suggesting use of suvorexant is associated with statistically significant improvements in sleep, the clinical significance may be limited as the difference between suvorexant and placebo sleep onset and maintenance data were generally no more than 30 minutes.3, 4 However, as chronic insomnia affects one in every ten Americans, the addition of this new sleep medication may provide some relief to patients who have unsuccessfully tried other sleep aids.

**TABLE: Selected Three Month Data from Study 1**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Time to sleep onset**  (PSG, mins) | | **Time to sleep onset**  (pt-est, mins) | | **Sleep maintenance** (PSG, mins) | | **Total sleep time**  (pt-est, mins) | |
| P | S | P | S | P | S | P | S |
| Baseline | 66 | 69 | 67 | 64 | 115 | 120 | 315 | 322 |
| Change from baseline | -27 | -35 | -17 | -23 | -25 | -42 | 41 | 51 |
| Difference between arms | -8  (p<0.01) | | -5  (p<0.05) | | -17  (p<0.001) | | 11  (p<0.05) | |

PSG: polysomnograph, pt-est: patient-estimated, P: placebo, S: suvorexant

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The Beers Criteria for Potentially Inappropriate Medication Use in Older Adults, often referred to as simply the Beers Criteria, provide guidance for health care professionals to optimize the safe prescribing of medications in older adults. The aims of the Beers Criteria include improving medication selection and reducing adverse drug events in older adults. These criteria are largely intended for clinicians to use in caring for adults aged 65 and older in the United States in all ambulatory, acute care, and institutionalized settings, with the important exceptions of hospice and palliative care.1,2

The Beers Criteria were originally developed in 1991 through efforts of geriatrician Mark H. Beers, MD. They were initially published in 1991 in the Archives of Internal Medicine, and have undergone subsequent revisions in 1997, 2003, 2012, and most recently, 2015.The American Geriatrics Society was responsible for the two most recent updates to the Beers Criteria. The remainder of this newsletter article will focus on important updates, revisions, and expansions within the most recent Beers Criteria compared to the 2012 update.1,2 **Continued on next page**

**Drug Information**

**Updated Beers Criteria**

By Laura Hart, PharmD (PGY2 Geriatric Pharmacy Resident, UWSOP)

**Updated Beers Criteria continued:**

The American Geriatrics Society published the most updated Beers Criteria on October 8, 2015 in the Journal of the American Geriatrics Society. These new criteria still include the three major sections included in the 2012 criteria: potentially inappropriate medications, potentially inappropriate medications due to drug-disease or drug-syndrome interaction, and potentially inappropriate medications to be used with caution. However, also included in the 2015 criteria are two new sections. One of these sections is potentially clinically important drug-drug interactions that should be avoided. One example of a drug interaction pair included in this section is corticosteroids (oral or parenteral) and NSAIDs; it is recommended that this combination be avoided due to the increased potential for gastrointestinal bleeding or peptic ulcers. In addition, many of the drug interaction pairs address a recommendation to avoid using ≥3 CNS-active medications (for example, an opioid receptor agonist analgesic should not be used with ≥2 CNS-active medications). The rationale for these recommendations is to help decrease fall risk. The CNS-active medications referred to in this section are antipsychotics, benzodiazepines, nonbenzodiazepine and benzodiazepine receptor agonist hypnotics, tricyclic antidepressants (TCAs), selective serotonin reuptake inhibitors (SSRIs), and opioids.2

The other new section in the 2015 Beers Criteria outlines medications that should be avoided or have their dose decreased in varying degrees of renal impairment. Examples of medications included in this section are dabigatran, spironolactone, duloxetine, gabapentin, ranitidine, and colchicine.2

Other notable differences in the 2015 Beers Criteria are medications that have been modified or moved to another category, medications that have been added, and medications that have been removed. A notable example of a medication class added to the 2015 Beers Criteria is proton-pump inhibitors, with a recommendation to avoid scheduled use for >8 weeks, unless for use in high risk patients (e.g., oral corticosteroids or chronic NSAID use), or in certain conditions such as erosive esophagitis or Barrett’s esophagitis. The rationale behind this recommendation is that proton-pump inhibitors are associated with C. difficile infection and with bone loss and fractures. Examples of medications removed from the 2015 Beers Criteria are mesoridazine and chloral hydrate, as these medications are no longer marketed in the U.S.2

To accompany the 2015 updated Beers Criteria, the American Geriatrics Society has also published two additional documents. The first of these is a guide describing how to use the criteria. The second document is a list of evidence-based alternative medications that can be used in place of potentially inappropriate medications outlined in the Beers Criteria. For example, this document recommends using intranasal normal saline, a second-generation antihistamine, or an intranasal corticosteroid instead of a first-generation antihistamine. This document also has an appendix that directs the reader to resources for non-pharmacologic options.2,3,4

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manage the more complicated patients, which allow the nurse practitioners to see a large number of more stable patients during the other days of the week. Other services the residents provide include diabetes management and education, refill authorization, medication therapy management, transition of care services post-hospital discharge, shared medical appointments, and depression follow-up.

During my time at PMG Monroe, I spent most of the day shadowing Dr. Huynh in the anticoagulation clinic where she sees an average of 25-28 patients per day. During each scheduled visit, she performed a point-of-care INR test, assessed for bleeding and adherence, reviewed prior visit notes, made therapeutic recommendations, and allowed time for questions at the end of the visit. A couple patients even recognized her from their previous visits. Through this experience, I observed the pharmacy resident practice her autonomy as a pharmacist. She was able to exercise her knowledge and skills to develop assessments and recommendations for patient care and establish patient-provider relationship. For Dr. Huynh, PMG Monroe turned out to provide the opportunities that she sought when searching for pharmacy residency programs.

In addition to observing Dr. Huynh in the anticoagulation clinic, I observed Dr. Chong performing various clinical pharmacy tasks. She evaluated refill requests, performed depression follow-up phone calls, and assisted in precepting a 4th year APPE rotation student who was working on a clinical consult. I could tell this residency program is a busy one requiring a lot of interdisciplinary collaboration, assessment, and reassessment of clinical services, which appear necessary to move the profession forward with the rest of healthcare.

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On Wednesday, October 28, 2015, I had the opportunity to shadow pharmacy residents Stephanie Huynh, PharmD, and Shirley Chong, PharmD, at Providence Medical Group (PMG) Monroe. For the last 25 years, pharmacy residency director Dr. Steve Erickson has trained pharmacy residents at PMG Monroe to help fulfill an increasing need for primary care providers in health care. With the enactment of the Affordable Care Act and the expected increased access to healthcare, the need for primary care providers is greater than ever.

Over the last few years, PMG Monroe has participated in the patient-centered medical home (PCMH) to improve patient care. The core features of PCMH include a personal physician who leads the team comprised of a pharmacist, nurse practitioner, and medical assistants, patient-centered coordinated care, quality and safety, alternative scheduling arrangements, and payment reform. The pharmacists’ clinical services at PMG Monroe have supported each element of PCMH and have in turn improved access to primary care within the clinic. The pharmacy services at PMG Monroe are largely implemented and assessed by the pharmacy residents.

Many of the clinical services the pharmacists provide at PMG Monroe started as residency projects, and the medical team determined them to be essential services. The pharmacists’ role in the anticoagulation clinic, where the pharmacy residents work twice a week, is to

**APPE Student Reflection**

**The Pharmacist is in!**

By Susan Diep (PharmD Candidate 2016, UWSOP)

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**The Pharmacist is in! continued**

Not surprisingly, the physicians at the clinic strongly support the services that the pharmacy residents provide and welcome the interdisciplinary practice. While at the clinic, I watched a physician walk over and talk to Dr. Huynh. He let her know that an INR for a mutual patient came back. They had a discussion about the patient’s acute situation. I was surprised at the interaction because of how easily it was for the two professionals to approach each other and communicate. Dr. Huynh explained, “The clinic layout strongly encourages interprofessional collaboration.” Looking around, I was not surprised. The office is an open space with physicians sitting next to medical assistants who are sitting across from the pharmacy team instead of individuals having a personal office. I got the sense that each professional played an integral role in the health care team. I could see how a setup like this makes it very easy to communicate and collaborate regarding patient care.

Washington law SB 5557 requiring insurance companies to recognize and reimburse pharmacists as providers goes into effect 2017 and I look forward to what the pharmacy residents of PMG Monroe will do next.