Poster Title: *Pharmacy residency preceptor requirements at academic medical centers: a survey of University HealthSystem Consortium hospitals*

Poster Type: Evaluative Study

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Purpose: The residency accreditation standards from the American Society of Health-System Pharmacists (ASHP) include preceptor requirements. As stated in the Spring 2014 edition of The Communiqué, the Commission on Credentialing found that preceptors do not meet these requirements in more than two thirds of PGY1 and PGY2 pharmacy residencies. The University Health-System Consortium (UHC, now Vizient), a collaborative of U.S. nonprofit academic medical centers, sought information regarding preceptor qualifications through a survey. The purpose was to gather information on how institutions address residency preceptor development programs, select preceptors, document preceptor qualifications, and assess precepting skills.

Methods: The survey was developed and distributed on behalf of the University HealthSystem Consortium (UHC) Pharmacy Council Professional Development and Workforce committee. The Institutional Review Board (IRB) at one author's institution granted exemption status for survey distribution. The web-based survey was then emailed to 332 UHC hospitals via listserve in October 2014 and remained open through November 2014.
Participants were asked to describe their preceptor development program, including the source of the educational components, training resources available, and ways topics are determined for preceptor development. Additionally, they were asked what criteria pharmacists must meet to become preceptors and what documentation is maintained regarding precepting activities. Finally, the survey included questions regarding preceptor evaluations, including who provides feedback and how often. The survey referenced preceptor requirements from the 2005 ASHP residency program standards.
The survey format was primarily multiple-choice, with free-text fields available for additional details. When more than one participant from an institution completed the survey, the responses from only the first participant were included in the analysis to avoid duplication. Participants did not have to complete the entire survey to be included in the analysis; for questions not answered, the denominator was adjusted accordingly to determine the overall percentage of respondents selecting each answer choice.

Results: Sixty-two institutions submitted responses (response rate equals 19 percent). Sixty-six percent of 62 respondents had a formal preceptor development program, which was mandatory for preceptors at 85 percent of 41 institutions. Seven institutions used internally developed materials, four used materials developed outside their organization, and 30 used both. Institutions reported availability of multiple training sources (webinars, meeting attendance, etc). Residency directors and/or the residency advisory committee most often selected topics for preceptor training. Sixty percent of 60 respondents allowed resident participation in the preceptor development program.
Of the 59 institutions that listed qualifications to become a preceptor, 85 percent required a completed academic and professional record, 68 percent required a certain amount of clinical experience, and 58 percent required a certain amount of practice/employment experience. Sixty-seven percent of 60 institutions had methods to assist pharmacists not meeting ASHP qualifications. Seventy-seven percent of 60 institutions required preceptors to keep a portfolio or other documentation of precepting activities. Evaluations completed by residents and preceptors were commonly used to evaluate preceptors; at thirty-seven percent of 59 institutions, others also formally evaluated precepting skills.

Conclusion: These results provide a “snapshot” of preceptor qualifications at academic medical centers. Substantial efforts are in place to ensure development of preceptors. At the same time, expanding and strengthening these current strategies, especially through collaboration among more experienced pharmacists and preceptors-in-training, will assist programs in meeting the PGY1 and PGY2 accreditation standards that go into effect in 2016 and 2017, respectively. Including residents in preceptor training can help the profession by providing foundational training for those residents to become future preceptors themselves.

Poster Title: *Student reflections of interprofessional education (IPE) among physician assistant, nursing, and pharmacy students utilizing human patient simulation*

Poster Type: Descriptive Report

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Purpose: Interprofessional education and simulation are increasingly utilized to prepare health professions students to enter the practice. High-fidelity simulation provides a safe environment for students to enhance clinical, professional, and communication skills. The purpose of this study is to describe the implementation and assessment of interprofessional education (IPE) utilizing human patient simulation activities among different health profession students; and, to assess the students' reflection on covering and achieving IPEC competency domains 1) Value/Ethics 2) Roles/Responsibilities 3) Communication, and 4) Team/Team work. Students' response to RIPLS survey questions were also analyzed.

Methods: Students collaborated, treated the patient, and communicated with the patient family during a variety of simulated patient encounters. Interprofessional activities were developed and administered among health professions teams utilizing simulated human clinical scenarios addressing issues such as Advanced Cardiac Life Support "ACLS", routine medical rounds, managing overdosage, and communicating bad news. Each simulation activity lasted for 90 minutes with different sessions for different teams of students offered 8 hours a day for a total of 18 days in a calendar year. Several team debriefing sessions were performed every 10-20-minutes for intra-session assessment and improvement; and, each was followed by a final debrief for the entire team. This was then concluded with 3 separate individual discipline debriefings. Debriefing approach of the Agency for Healthcare Research and Quality (AHRQ) TeamSTEPPS was utilized. Reflection on the covering and achieving of the 4 Interprofessional Education and Collaborative (IPEC) competency domains which are 1) Value/Ethics 2) Roles/Responsibilities 3) Communication, and 4) Team work was obtained. Students' responses to the RIPLS survey questions were also analyzed.

Results: Student responses indicated enhancement improvement in problem solving skills (93.4%), communication skills (90.1%), and understanding different roles and responsibilities (91.1%); while 94% indicated that the exercise was well organized, 77% indicated that the objectives were clearly identified. 47.25% of the students agreed/strongly agreed that the IPE added value to the classroom experience. With regard to student response to the RIPLS survey questions, the students rated 4.5 or above on 11 of

14 positive questions relating to the activity utilizing a Likert scale. The other 3 questions received a rating of 4.3-4.4 out of 5 Likert scale.

Conclusion: Scheduled implementation and utilization of the IPE experience enhanced the students' overall learning experience in relation to the IPEC competency domains; and, provided a degree of added value to the classroom experience.

Poster Title: *Fostering scholarship: introducing pharmacy residents to the manuscript development process*

Poster Type: Descriptive Report

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Purpose: To describe the implementation of a manuscript development experience as part of a Pharmacy Residency program at an academic medical center.

Methods: As a residency program requirement, medical writing skills must be incorporated into the PGY-1 Pharmacy Residency curriculum based on current standards; these skills are fundamental to pharmacy clinicians and scholars alike. New practitioners frequently struggle with scholarly development and manuscript generation and pharmacy residents may be reluctant to publish research findings due to intimidation of facing the publication process for the first time. At Robert Wood Johnson University Hospital, both PGY-1 and PGY-2 specialty residents are strongly encouraged to identify a preceptor mentor to develop and pursue a peer-reviewed publication as part of their residency training to face this daunting process with guidance and structure.

Results: Pharmacy residents identify a topic of interest stemming from an elective or core rotation experience and may be based on research, clinical questions, or cases seen. The identified preceptor mentor assists the resident with identification of an appropriate journal, outline development, and structuring an appropriate literature search strategy to identify content for inclusion. As the resident works on formulating manuscript sections, the mentor systematically and periodically evaluates resident progress and provides edits and comments to strengthen the work. The manuscript receives a final review by the mentor, who also serves to facilitate the journal submission process. Once the manuscript is submitted, the mentor oversees the response to the peer review concerns to strengthen the quality of the manuscript and ensure all necessary changes are made. To date, PGY-1 and PGY-2 pharmacy residents have successfully published an array of peer-reviewed manuscripts, including case reports, clinical review articles, and published reports of original research findings. Although this process has not been formally evaluated, residents anecdotally report this is a useful format for addressing this objective and very valuable to professional growth and development.

Conclusion: Manuscript development can be incorporated into pharmacy residency training experience with the preceptor facilitating this exercise and providing guidance in the process.

Poster Title: *Implementation and outcomes of a post-graduate pharmacy residency learning experience in medical writing*

Poster Type: Descriptive Report

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Purpose: Pharmacy residency programs have an opportunity to expand learning experiences beyond standard clinical roles of post-graduate pharmacist training, but rarely are there formal instruction on medical writing skills or are scholarship and publication opportunities provided to the resident. In order to address this deficiency, a formal medical writing rotation and curriculum was designed and implemented in an academic tertiary care medical center residency program. Currently, there is very little literature or resources available focusing on teaching medical writing as part of a post-graduate pharmacy residency educational program.

Methods: The ASHP-accredited pharmacy residency program is comprised of three post-graduate year 1 (PGY1) residents and PGY2 residents in Drug Information, Geriatrics, and Oncology. The poster will describe the implementation of a medical writing rotation into the existing post-graduate pharmacy residency program. Description will include: rotation structure, timelines, and scheduling; description of the general curriculum and learning experiences; and opportunities and challenges associated with the implementation of the medical writing rotation. Outcomes of the rotation will include total number of residents who have completed the learning experience, publication rate, total number of publications, and additional scholarship contributions (e.g. number of manuscripts collaboratively peer reviewed). Outcomes were retrospectively collected from initiation of the rotation to April 2016.

Results: The formal medical writing learning experience was established in February 2011 and is scheduled as an elective block rotation over a 4-week time period. The rotation is divided into 3 learning components: medical writing topic discussions, composition of a manuscript, and collaborative peer reviewing. In addition, as part of the core rotation responsibilities, each resident is required to complete 2 formal projects: the composition of a manuscript of publishable quality and the completion of a collaborative review of a manuscript submitted to a professional journal. In total, 13 PGY2 residents have completed the medical writing rotation since its inception. This learning experience has directly led to the publication of 7 manuscripts in peer-reviewed journals and 3 manuscripts are currently undergoing peer review, resulting in a publication or submission rate of 92.3% (12/13 residents). Additionally, the residents have collaboratively peer-reviewed 6 manuscripts submitted to a professional biomedical journal.

Conclusion: A structured medical writing learning experience during a pharmacy resident's post-graduate training program can help develop the foundational skills necessary to establish competency in

medical writing and foster resident interest in future pursuit of professional medical writing and scholarship activities. Through participation in this rotation, residents are able to make a positive contribution to the profession early in their career, while developing mentoring relationships with healthcare professionals throughout the learning experience.

Poster Title: *Upgrade needed: student pharmacists' optimal baseline informatics knowledge and rotation structure*

Poster Type: Descriptive Report

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Purpose: Pharmacy informatics, while existing for several decades, is emerging into a high visibility field of practice for current pharmacists and student pharmacists. The relatively new interest in informatics has generated new rotations to meet demand. These rotations may have difficulty matching the goals and outcomes of a traditional clinical student rotation. While informatics courses are gaining popularity in pharmacy curriculum, many of the pharmacy informatics concepts are foreign to students upon arrival for rotation. The HCA corporate informatics pharmacy group has developed guidance in an effort to address these observed gaps in student knowledge within the student rotation.

Methods: To address common gaps in student pharmacist's knowledge surrounding pharmacy informatics topics, the rotation has been specifically structured for the student to develop a foundational knowledge of pharmacy informatics. If a student possesses knowledge and experience with informatics the rotation is adjusted.
Orientation to the informatics rotation includes a survey to assess baseline knowledge and affinity for informatics. Based on the survey responses, the student is given additional readings and direct instruction. The student is also given a timeline of the rotation, including expectations of learning outcomes and work product.
The main rotation goal becomes ensuring the student comprehends pharmacy informatics topics encountered, and can execute basic informatics projects. Methods to ensure student learning and comprehension of informatics issues include targeted topic discussions, journal clubs, major project presentations, on-demand projects, and other activities. The time necessary to ensure the student has the foundational comprehension of informatics concept limits the ideal rotation outcomes.
Student performance could be at a higher level if entering a rotation with a higher baseline of pharmacy informatics knowledge. However, many students have limited exposure to pharmacy informatics in didactic curriculum, so the goals and expectations of this rotation are modified to encourage the student learner to have a full comprehension of informatics topics, rather than focused on developing a subject matter expert in the specialty.

Results: The students that complete this rotation develop a comprehension of pharmacy informatics concepts as well as real world output they can utilize to demonstrate their understanding. The students can apply these concepts on future rotations, application to residency, or any other setting they choose to practice.

All students have successfully met rotation objectives under this structure, and when asked about the rotation, it is often positive and constructive feedback. Currently a formalized method of collecting student feedback is being developed for rotation process improvement.

A detailed syllabus has been developed to outline the rotation structure and is adjusted monthly to meet student and preceptor needs and requirements. It contains a baseline survey, timeline of project dates, informatics resources, and other helpful information. This helps provide a logical learning process for the student, as well as a familiar routine for the preceptor.

A "wish list" of topics that would be ideal for students entering the rotation to review has also been developed by the preceptor team. This list is incorporated into the rotation to ensure that these basic tenants of pharmacy informatics are covered with the student.

Conclusion: Observations at this practice site demonstrates there continues to be a generally low baseline knowledge of pharmacy informatics for students entering an informatics rotation. To address this gap in knowledge, the rotation structure has been adapted to meet the basic needs of the student to equip them with fundamental informatics knowledge so they can comprehend and function in a basic informatics space. This fundamental knowledge has developed into a "wish list" of topics that, if a student had as a baseline entering into the rotation, could perform at a higher level and experience more advanced informatics concepts.

Poster Title: *Utilization of appreciation languages in the workplace as a preceptor development tool*

Poster Type: Evaluative Study

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Purpose: New Hanover Regional Medical Center (NHRMC) is a community teaching hospital, with 30 residency preceptors across four residency programs. In accordance with the American Society of Health System Pharmacists (ASHP) accreditation standards, the residency programs conduct continuous quality improvement initiatives. A recent initiative identified that preceptors often do not feel supported. To address this issue and increase understanding about how residency preceptors prefer to be acknowledged and interact with leadership, colleagues, and residents, "The 5 Languages of Appreciation in the Workplace: Empowering Organizations by Encouraging People" was utilized as a tool to identify preceptors preferred language of appreciation.

Methods: Residency preceptor meetings are conducted on a quarterly basis and include preceptor development topics as a standing item. Residency preceptors in pharmacy management had previously utilized the appreciation languages within the manager group and identified this as a useful tool to increase employee engagement and to serve as a tool to better understand the appreciation needs of others. Books were provided that included an online access code to complete a motivating by appreciation (MBA) assessment. The MBA is designed to identify the preceptor's primary, secondary, and least utilized language of appreciation. Four weeks were allotted for preceptors to complete the assessment. It was not necessary for preceptors to read the book to participate. The preceptor development topic reviewed the 5 languages of appreciation and how they related to the individual results of each preceptor participating. The 5 languages are classified as the following: words of affirmation, quality time, acts of service, tangible gifts, and physical touch. Preceptors were educated on how to meet the needs of colleagues with different appreciation languages. Each preceptor that participated in the exercise was provided with an acknowledgement of his or her language appropriate to that preceptor's language. As an example, preceptors classified as "words of affirmation" received thank you cards while those preceptors classified as "quality time" received appointments for dedicated time to discuss issues with leadership.

Results: The response rate for completion of the motivating by appreciation assessment was 76%. The most common appreciation language among preceptors was acts of service at 43.5%, followed by words of affirmation at 30%, and quality time at 22.5%. Only 1 preceptor favored tangible gifts and no preceptors preferred touch. The most common secondary language was words of affirmation (43.5%), followed by acts of service (30.5%) and quality time (26%). The least favored language was gifts (69%),

followed by quality time (17%), words of affirmation (8%), and acts of service (4%). The results were shared with the preceptor group during the quarterly preceptor meeting.

Conclusion: This preceptor development tool received very positive feedback from the preceptors who participated in the exercise. It provided insight into how preceptors prefer to be engaged by colleagues, residents, and department leadership. The preceptor group left the meeting with an assignment to report one example of how they met another preceptor's appreciation language as well as how someone met their appreciation language. This will be reported at the next quarterly preceptor's meeting. Appreciation languages will be included as a standard tool for new preceptors and new residents, starting with the 2016-2017 class.

Poster Title: *Process of individualizing orientation for non-traditional residents*

Poster Type: Descriptive Report

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Purpose: The American Society of Health-System Pharmacists Residency Accreditation Standards require that residents be oriented to the program. This includes creating a development plan based on an initial assessment. Over the past six years, non-traditional residents have comprised 4.2–5.5 percent of all residents. These individuals, who have been practicing pharmacists for one or more years prior to beginning residency training, often possess greater experience and familiarity with health-system and pharmacy operations; however, may have less clinical experience because of the time since formal education. It is particularly important to personalize orientation for non-traditional residents who may have unique learning needs.

Methods: The residency program director and residency coordinator for hospital services reviewed the current learning experience description and learning objectives in place for orientation of traditional postgraduate year one (PGY1) pharmacy residents. Using a strategic approach, activities/topics included in orientation were ranked according to priority level, practice location, preceptor role primarily involved, and applicability to future learning experiences. Three priority levels (necessary, preferred, and important if time permitted), five practice location classifications (clinical inpatient, clinical outpatient, management, medication-use, and teaching), four preceptor role delineations (direct instruction, modeling, coaching, and facilitating), and a scale of 1-10 for applicability to future learning experiences were identified. These classifications were then reviewed by primary preceptors of the program to ensure consensus of rankings and delineations. During the first week of the program, each resident is given a baseline self-assessment of the required PGY1 outcomes, goals, and objectives. In addition, residents are asked about their self-perceived strengths, areas in need of improvement, prior experiences, and short and long-term goals. These are reviewed by the residency program director with the resident.

Results: Every resident in the program, traditional and non-traditional, completed the baseline assessment during the first week of the residency. After completion of the baseline assessment, the results of the non-traditional resident were compared to the classification system to develop their individualized orientation. For the non-traditional resident, the medication-use area was determined to be a lower priority area requiring less emphasis, while the areas of clinical outpatient and clinical inpatient were identified as areas that were necessary and required greater emphasis. Because these areas were ranked as highly applicable to later learning experiences, more time was devoted during the

orientation period for the non-traditional resident. Additionally, more direct instruction through readings and topic discussions were used to ensure that the resident's knowledge base was current. Preceptor modeling of direct patient care activities was an essential component of all resident orientation. The non-traditional resident was assigned specific days with clinical practitioners to address issues of data collection, clinical problem solving, development of a monitoring plan, and communication with other healthcare professionals. A customized orientation allowed for the identification of strengths and improvement areas that would assist preceptors in targeting the resident's needs on subsequent learning experiences.

Conclusion: Over time, residency programs are likely to encounter a resident on a non-traditional career path. Our residency program, like most, did not have historical experience with a pharmacy resident who was not a recent graduate. However, our program was committed to designing a customized orientation experience and plan to best meet the resident's needs. Overall, it is important to individualize orientation and create a development plan to prepare the resident for a successful year. Creating a classification system of activities/topics and comparing it to a baseline assessment can be used to develop a successful orientation for the non-traditional pharmacy resident.

Poster Title: *Postgraduate year one resident teaching in a large team-taught pharmacy course*

Poster Type: Descriptive Report

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Purpose: Teaching-related outcomes are incorporated within standards for American Society of Health-System Pharmacists accredited Postgraduate Year One (PGY1) Residency Programs. These residents are often in their first year of practice following receipt of a Doctor of Pharmacy (Pharm.D.) degree. Creating a teaching environment which allows for mentoring and growth can be a positive experience in PGY1 training. The objective was to provide structured teaching experiences for PGY1 residents by integration into a required Pharm.D. pathophysiology course.

Methods: Residents concurrently enrolled in the College's resident education academy were paired with and mentored by experienced faculty discussion group leaders (DGLs) to serve as co-DGLs. In weekly pre-discussion sessions, residents met with the content experts/case writers to review assignments, discuss topic content, and standardize case-specific teaching points. Course content included pathophysiology and clinical assessment of pharmacotherapy-related diseases. Eight weekly small group (25-30 students) discussion sessions applied content for 27 diseases via case-based activities. Throughout the semester, residents took an increasing role in facilitating sessions, while receiving DGL supervision and feedback. DGLs mentored the residents in teaching methods, assessment, and difficult learning situations (e.g. addressing academic dishonesty, suboptimal student performance, learning disabilities). Residents assumed other DGL functions including proctoring, delivering effective student feedback, and evaluating exams, quizzes, and assignments.

Results: Twenty-one PGY1 residents from two regional residency programs participated from Spring 2009 to Spring 2016. Each academic year there have been a minimum of two and up to a maximum of four PGY1 residents who participated. Twelve (57%) PGY1 residents subsequently completed a second year of residency training. Ten (48%) resident co-DGLs accepted Assistant Professor faculty positions and three (14%) accepted adjunct positions upon completion of residency training. These faculty positions have been in both inpatient and outpatient practice settings.

Conclusion: Providing a structured teaching opportunity for PGY1 residents to practice alongside and be mentored by experienced faculty members is essential to develop future faculty educators. A clinically-based pathophysiology course provides a wide range of content for PGY1 resident involvement. The role

of co-DGL tailors the experience to the level of a PGY1 resident to assist them in making an informed decision regarding pursuit of an academic position and to prepare them for future clinical educator roles.

Poster Title: *Developing teaching abilities in postgraduate year two pharmacy residents by involvement in a pathophysiology course*

Poster Type: Descriptive Report

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Purpose: Postgraduate training allows for enhancement of clinical skills. Postgraduate Year Two (PGY2) training provides an environment for this growth in a more specialized area. Teaching is often a component of this training as teaching-related abilities are within standards for PGY2 residency programs accredited by the American Society of Health-System Pharmacists. The objective was to integrate PGY2 residents into structured teaching experiences in a required course for first professional-year pharmacy students.

Methods: In eight weekly small group (25-30 students) sessions facilitated by discussion group leaders (DGLs), students apply pathophysiologic content and assess 27 pharmacotherapy-related diseases via case-based activities. Each semester, 2-3 PGY2 residents served as independent DGLs. In weekly pre-discussion sessions, DGLs met with content expert-case writers to discuss topic content, review assignments, and standardize case-specific teaching points. Faculty DGLs mentored residents regarding teaching methods, assessment, and difficult learning situations (e.g., addressing academic dishonesty, suboptimal student performance, learning disabilities). Residents performed all DGL functions including delivering effective feedback, proctoring, and evaluating student performance. Residents were concurrently enrolled or had completed the College's resident education academy. Ongoing student performance in faculty vs. resident led groups was compared. Residents received student evaluations of their DGL performance using the faculty form.

Results: Twenty-seven PGY2 residents (6 Ambulatory Care, 1 Infectious Disease, and 20 Internal Medicine) from five regional residency programs participated from Spring 2009 to Spring 2016. Student performance was similar in resident and faculty led groups. Student evaluations of residents and faculty were also similar. Twelve (44%) PGY2 residents accepted full faculty positions and four (15%) accepted adjunct faculty positions upon completing residency training.

Conclusion: Providing structured teaching opportunities for residents with formal mentoring/feedback is essential to develop future faculty educators. A clinically-based pathophysiology course provides a range of content for Ambulatory Care and/or Internal Medicine PGY2 involvement. The DGL role tailors the

experience at an appropriate level for PGY2 trainees, allowing autonomy in a controlled environment. The DGL role assists PGY2 residents in making informed decisions regarding pursuit of academic positions and prepares them for future clinical educator roles.

Poster Title: *Growing pains: restructuring residency leadership to include a residency coordination team*

Poster Type: Descriptive Report

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Purpose: With the continued expansion of post-graduate pharmacy residency programs within a single pediatric facility, an increasing amount of overlap among preceptors and residency facilitators was noted. To better streamline policies, standards, and expectations without duplication of efforts, the decision was made to restructure leadership to include a residency coordination team. The goal for this team was to optimize individual leadership interests and expertise to more evenly distribute existing work, to allow additional time for focusing on program improvement, and increase consistency and continuity across all residency programs.

Methods: A team of five pharmacists was created to manage the two established residency programs (PGY1 Pharmacy Residency and PGY2 Critical Care Pharmacy Residency) in addition to the new PGY2 Oncology Pharmacy Residency. The five member team was comprised of two program directors and three residency coordinators. In order to delineate roles and responsibilities for each coordinator, a comprehensive list of necessary duties was compiled. Responsibilities were grouped together based on time commitment and similarity. The identified roles and responsibilities of the residency coordinators were divided into the following categories: residency accreditation, preceptor development, resident research projects, teaching opportunities, recruitment, resident presentations, and orientation. Each coordinator was assigned one to two areas of focus.

Results: In the first two months after implementation of the new residency coordination team, each coordinator recommended improvements in their respective areas based on experience and reflection on the previous residency year. Ideas were discussed at biweekly coordinator meetings. Notable enhancements to date have included a complete review of the new ASHP Residency Standards with notation of and plans to address deficiencies, restructuring of learning experience descriptions including objectives taught and evaluated on each rotation, and development of a preceptor gap analysis to be addressed during each preceptor's yearly performance appraisal. Preliminary observations of the coordination team have led to redesign of the resident research project timeline, institution of new resident presentations to enhance the effectiveness of topic discussions as well as educate newly hired central pharmacy staff, and development of a formal mentor program. Suggested enhancements were presented to management, preceptors and current residents at the first annual residency retreat.

Conclusion: The development of a residency coordination team led to a significant increase in efficiency and productivity at a residency site consisting of three residency programs. The addition of three residency coordinators minimized the overlap of responsibilities, allowed each individual to contribute a significant amount of time to make improvements specific to their area of focus and promoted consistency across all residency programs.

Poster Title: *Layered learning as a model for furthering pharmacy impact on patient care*

Poster Type: Descriptive Report

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Purpose: The layered learning model (LLM) utilizes students and residents, each to their fullest ability, working under the pharmacist practitioner, with the goal of growing understanding and actively employing the techniques learned all while utilizing a hands on approach to learning. At VA Black Hills HealthCare System (BHHCS), we have approximately forty P4 students completing various rotations and three PGY1 residents annually. A specific example of how this model is utilized at VA BHHCS includes medication use evaluation (MUE).

Methods: The resident is tasked with a specific MUE through their preceptor. Once the concept is developed, the resident then coordinates with the P4 students to assist in timely completion. As MUEs often require a lengthy chart review for a large number of patients. P4 students are able to utilize the information as compiled by the resident to systematically review patient charts to obtain needed information related to the goals of the MUE. This then allows the resident to assess that information and write up the results and next steps for improving patient care. The resident then reviews the findings and action items with the preceptor who jointly take this to Pharmacy and Therapeutics Committee for implementation of this quality improvement activity. A few examples of specific MUEs that have been completed utilizing this model include: testosterone, antimicrobial stewardship and chronic obstructive pulmonary disease therapy.

Results: MUEs utilizing the LLM are generally completed in entirety within three months' time. Making this a much more timely initiative that would be possible without utilization of this approach. Students benefit from the LLM by being involved in patient care as a pharmacist extender, working as part of a team and developing communication their skills. Residents benefit through managing the project, honing their clinical knowledge through teaching of students and improving their confidence through active engagement with the team as the lead for the MUE. Patients benefit through a more thorough review of the appropriate use of their medications.

Conclusion: This LLM allows VA BHHCS to provide better care to patients through a more comprehensive approach to patient care. Without the use of students and residents, pharmacist practitioners would be unable to dedicate this kind of time and attention to the appropriate system-wide use of high risk medications for our patients.

Poster Title: *Role of residency expansion in advancing the practice advancement initiative (PAI)*

Poster Type: Evaluative Study

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Purpose: To assess views of residents, pharmacy directors and residency program directors (collectively referred to as "directors") on the role of pharmacy residency expansion in advancing the practice advancement initiative (PAI).

Methods: In a two-part electronic survey, residents and directors were asked to rate the contributions, benefits and barriers of pharmacy residency expansion in advancing the PAI.

Results: Twenty-nine residents completed the first survey and identified top areas of newly implemented pharmacy resident services being provided by expansion to include patient education (59%), medication reconciliation (55%) and transitions of care (52%). Almost 90% of residents indicated their residency program had added new services in the previous two years. Respondents believed these services aid in preparation for roles as clinical pharmacists and add value to the overall residency experience.
Fifty-six directors completed the second survey and identified many clinical and financial benefits of residency expansion. Ninety-eight percent of directors agreed or strongly agreed that residents are a good source of well-trained future pharmacists at their respective institutions. Other perceived benefits of residency expansion included expansion of patient care services and clinical attributes. Barriers to residency program expansion were identified and included lack of financial reimbursement for PGY2 residency programs (79%), and preceptor availability (54%).

Conclusion: Expansion of services to meet the future needs of the profession may be dependent upon residency program expansion. These survey results support the concept of utilizing resident trainees to expand the services provided by pharmacy departments in accordance with the PAI.

Poster Title: *Creation of a teaching and learning certificate program at a non-college of pharmacy affiliated hospital*

Poster Type: Descriptive Report

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Purpose: Learning is a life-long process and each individual's learning process is different. Pharmacists often mentor future pharmacists and other health care providers throughout their career. Many pharmacy residency programs offer a teaching certificate program to promote development of residents' teaching skills. Most teaching certificate programs are available in conjunction with an on-campus college of pharmacy. Inclusion in these programs is often limited and attendance for off-site instruction is logistically challenging. Loyola University Medical Center created an application-based pharmacy resident teaching and learning certificate program utilizing the expertise of the clinical staff to better meet the educational needs of pharmacy residents.

Methods: A thorough literature search was conducted by the teaching and learning certificate program coordinators for evidence based publications that described the key components of a teaching certificate program. Utilizing both literature and personal experiences with similar programs, it was decided to implement an application-based style teaching and learning certificate program at our institution. Selection of faculty for the program was based on teaching experience and familiarity and interest in a session topic. Pre and post session assignments and personal reflection questions for specific sessions were designed and implemented at the faculty member(s) discretion. Any changes in the initially provided recommended reading required the approval of the co-coordinators. Application of the material occurred within the institution via informal and/or formal teaching opportunities. Evaluations were created using a Likert scale. Faculty completed resident evaluations correlating to resident progress as needs improvement (1), satisfactory progress (2) or achieved status (3) with optional comment. A resident composite score of 2 or greater was required for successful completion of the program in addition to submission of a complete teaching portfolio. Resident feedback using session specific Likert scales with optional comments was required at the end of the program. Evaluations were reviewed by the program co-coordinators and residency program director, and was used to provide feedback to faculty to enhance the program for the following year.

Results: The teaching and learning certificate program offered at Loyola University Medical Center has successfully graduated seven post graduate year 1 pharmacy residents since its implementation in 2014. Residents completed all session assignments and personal growth was seen as they progressed through

the program. Comparison of the pre and post session reflections and additional self-evaluations post educational opportunities enhanced their self-awareness on their individual teaching style. The program was well received by both the residents and faculty. Resident evaluations from the program reported that 100% of the residents agreed that the program was beneficial to their career. A variety of teaching opportunities were offered, such as medical and nursing staff education, pharmacy staff education, ACPE accredited on-site seminar presentations, and pharmacy student precepting opportunities. These opportunities were found to be of particular benefit for participants and reflective of what will be encountered in their future practice.

Conclusion: Implementation of a successful and well received teaching and learning certificate program at a non-college of pharmacy affiliated hospital is feasible. Utilization of teaching experience, literature support, and faculty expertise and interest assists in creation of a successful program. A formalized program syllabus with participant and faculty expectations and deadlines is critical for success. Realization that teaching opportunities expand beyond didactic lectures and the foresight to seek out non-traditional educational opportunities reflects the future of pharmacy education and is key to program success at a non-college of pharmacy affiliated hospital.

Poster Title: *Code fear revisited: Simulation training in critical care and emergency medicine codes*

Poster Type: Evaluative Study

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Purpose: Simulation has been used for decades in training professionals an advanced skill. The use of simulation has increased the training of healthcare providers to enhance knowledge, skills, satisfaction, and adherence to protocols in practice. Post-graduate year (PGY) 1 resident must demonstrate mastery of critical care and emergency medicine competencies before functioning independently. Since the residents have minimal to no experience, we implemented simulation modules to increase the PGY1 resident's confidence.

Methods: This retrospective analysis evaluated the pharmacy resident's perception of simulation modules conducted during the orientation period of the residency program. The modules covered simulation events including stroke, sepsis, out-of-hospital cardiac arrest, trauma, and multi-disciplinary in-hospital cardiac arrest scenarios utilizing high-fidelity simulation. All PGY1 residents received training in American Heart Associated Advanced Cardiac Life Support (ACLS) certification plus a review of the code cart contents prior to the simulation modules. A post-training survey assessed the resident's perceived confidence and skill with the simulation training.

Results: Of the six residents surveyed, all participated in five simulation models. For the stroke simulation, 80 percent were confident with patient screening for contraindications and mixing alteplase for administration. However, delay in first response greater than one month occurred for 60 percent of the respondents. With trauma activations, 80 percent desired more time with trauma simulation with 40 percent needing more knowledge of medications including rapid sequence intubation agents. All residents reported limited confidence with programming infusion pumps to deliver medications. Regarding out-of-hospital cardiac arrest and sepsis simulation, all stated it was greater than six months between time of simulation and first response of an actual event. Uncertainty regarding their role as the pharmacist was also reported for in-hospital cardiac arrest. Interestingly, 40 percent of respondents had no prior emergency response experience and 60 percent believed the simulation for prepared for them to function independently. However, 40 percent of respondents stated it was one to two months before they participated as the sole pharmacist in an actual in-hospital cardiac arrest event.

Conclusion: In our PGY1 residents, simulation training during orientation improved resident's confidence and comfort in performing the pharmacist's function during critical care and emergency medicine based scenarios. We identified areas of improvement to optimize future simulation models to

enhance the learner's experience. Future direction for simulation training of our pharmacy residents will incorporate more focused time in each of the simulation modules. In addition to the simulation modules, residents will participate in actual critical care and emergency medicine events throughout their orientation period of six weeks.

Poster Title: *Expanding preceptor support and student guidance by implementing an advanced pharmacy practice experience (APPE) faculty advising program*

Poster Type: Descriptive Report

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Purpose: When students leave campus for experiential education, structured contact with faculty dramatically decreases. Faculty serve as preceptors for some rotations, but these interactions are with small numbers of students. A program was designed to increase faculty involvement with students during the advanced pharmacy practice experience (APPE) year. The role of these APPE advisors is to guide students, while identifying and tracking those at risk of struggling (due to issues of knowledge, behavior, or circumstance). This project describes the concept, evolution, and implementation of a faculty APPE advising program.

Methods: A literature review was conducted which yielded minimal research on how to increase student-faculty communication during the APPE year. A formalized program was developed in the 2014/2015 Academic Year to increase the number and quality of student-faculty interactions. This initial version of the program utilized only practice faculty, and involved faculty tracking APPEs based on the health-system in which the rotation took place. Student development and progression is communicated by the faculty member to students, preceptors, and the experiential team, who then provide remediation as needed. Interim results were gathered via student evaluations, and adjustments to the program were made. The program was modified in Academic Year 2015/2016 to include basic science faculty, and now utilizes a student's faculty advisor as the primary contact. Time frames for structured contact between faculty advisor and APPE student were normalized to occur four times dispersed throughout the year. A compliance layer was added near the end of the 2015/2016 academic year to ensure all students were receiving faculty guidance. Faculty received training on advising, the documentation process, and the experiential portion of the curriculum during both program years.

Results: A faculty APPE advisor program was implemented to guide students during their APPE year, with faculty advisors formally documenting communications and student progress. Advisors guide students while identifying and tracking those at risk due to knowledge deficits, professionalism concerns, and/or life circumstances. APPE students with regular faculty communication increased from 9% prior to the program starting, to 45% and 64% for at weeks 18 and 30 of APPE year 2014/2015. After changing the point of contact to the faculty advisor in 2015/2016, APPE students receiving regular

faculty communication increased to 68% at both weeks 18 and 30. Student referrals to the Experiential Education Office were compared, suggesting the program identified issues/concerns sooner.

Conclusion: Using a formalized advisor program during the APPE year increases student communication with faculty and also increases accountability for stated learning and practice objectives. The program also allows for enhanced detection of student issues/concerns and provides additional layers of support for students, preceptors, and the experiential team.

Poster Title: *Longitudinal introductory pharmacy practice experiences (IPPEs) decrease preceptor training burden and increase student time on site*

Poster Type: Descriptive Report

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Purpose: The IPPE (Introductory Pharmacy Practice Experience) is vital to the educational progress of pharmacy students. Incorporating meaningful IPPE experiences into the curriculum is difficult due to logistical issues such as scheduling around classroom commitments, finding quality sites, and site availability constraints dictating the delivery method or site proximity. Three-year programs face additional challenges like compacted didactic content and shortened summers. Health-system IPPE sites are particularly hard placements due to increased preceptor and site workload. This project describes the concept and implementation of an IPPE curriculum expansion utilizing a longitudinal aspect and increased, non-simulated IPPE hours in a 3 year program.

Methods: At this program's inception, there was an emphasis on community IPPEs and attempts to balance the number of health-system and community experiential hours was undertaken. To help increase both the quantity and quality of experience of our students, a task-force was created to look at restructuring Pacific's IPPE curriculum. Program goals were identified as: 1.) increase student time on site and thus decrease the relative burdens of repeated orientation and pre-rotation paperwork for preceptors and sites, 2.) increase total IPPE hours in the curriculum, 3.) provide student off-campus experiences earlier in the curriculum, 4.) equally proportion the IPPE hours spent in health-system and community pharmacy, 5.) increase quality of student IPPE experience, and 6.) eliminate simulation in experiential courses. A literature search was performed showing few solutions that achieved program goals that would fit in the 3 year curriculum. An innovative IPPE curriculum expansion with a longitudinal aspect was developed by the task force to improve the quality of IPPE education. This new IPPE curriculum was proposed and approved by the School's Curriculum Committee and Preceptor Advisory Board and was implemented in the 2014/2015 academic year.

Results: An IPPE curriculum was redesigned to place students in long-term care facilities during their first semester in a service learning experience over four afternoons. A longitudinal aspect was added to community IPPE courses across three consecutive semesters. In the longitudinal community IPPE, students were at the same site and with the same preceptor as they progressed through technical and then professional tasks. The longitudinal community IPPE included a full time, three week summer

experience once the students were licensed as interns. Health-system hours were delivered as 6 continuous weeks at 40 hours per week during the summer after the students' first year. While didactic online learning bridge connections still support each IPPE experience, simulation hours were removed from the IPPE curriculum. Students' total IPPE hours increased in both community and institutional environments to a total of 240 hours in each setting. The redesigned IPPE curriculum now provides 60% greater hours than the 300 IPPE hours required by the Accreditation Council for Pharmacy Education (ACPE). Feedback on the IPPE curricular changes were sought from site coordinators, preceptors, students, and the Preceptor Advisory Board. The impact of the change was monitored by the Office of Experiential Education, Curriculum Committee, and Assessment Committee.

Conclusion: Adding a longitudinal aspect to an IPPE curriculum and increasing non-simulated hours benefits the experiential sites by: decreased onboarding and orientation efforts, increased student time at site, and increased ability of students to contribute during their experience. With the addition of these longitudinal aspects, preceptors were better able to see students' progress in the program and were able to form stronger mentor-mentee relationships.

Poster Title: *Development and implementation of an inter-professional patient presentation pilot between nursing and pharmacy*

Poster Type: Descriptive Report

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Purpose: Describe the development and implementation of a structured inter-professional experience between nursing students during their advanced clinical rotations and pharmacy students during their Advanced Pharmacy Practice Experiences (APPEs). Medication management is imperative to patient safety and outcomes in clinical settings, so it is crucial for nursing and pharmacy both understand and appreciate each others' practical role. We aimed to use each profession's approach in reviewing a specific patient in the clinical setting and discussed the similarities and differences in each discipline's plan of care for the patient.

Methods: University of Portland School of Nursing and Pacific University School of Pharmacy place students at Providence Health and Services, a large health-system in Portland, Oregon. A total of 4 Pacific University School of Pharmacy APPE students were paired with 14 University of Portland advanced clinical nursing students and assigned to meet on two occasions to discuss patient cases and describe a plan of care from a nursing perspective and pharmacy perspective. An on-site faculty member from each program was assigned to oversee the discussions and provide guidance. Nursing and pharmacy students worked together to identify a single patient case to present prior to each case discussion and worked through how each profession would present the patient based on their respective disciplines. After presenting and describing a plan of care for the patient from each perspective, time was set aside for nursing students to ask pharmacy students clarifying questions about their approach to care and vice versa.

Results: Two 90-minute sessions were held one week apart where pharmacy and nursing students met to discuss one patient case per session. Three pharmacy students and 14 nursing students met on both occasions where they presented and described a plan for the same patient and discussed afterward from the perspectives of nursing and pharmacy. Nursing students presented first and described the patient case through the nursing lens, which included a "head-to-toe" assessment of systems and a plan of care, which was comprehensive and included disciplines like social work and physical therapy. Pharmacy then presented and focused on medication related problems and how to best optimize the

patient's care from a medication standpoint. This allowed pharmacy students and nursing students to better understand and appreciate how each approaches the same patient case. There was a fruitful question and answer session after each side presented the patient, which allowed nursing and pharmacy to explore even deeper how and why each discipline approached care in the manner they did.

Conclusion: Pharmacy APPE students partnered with nursing advanced clinical students provided valuable insight and experience into how each profession approaches patient care. When implementing this for future nursing and APPE students, we will include a shadowing component, where pharmacy students will shadow nursing students during a scheduled medication administration time. This will allow for better understanding of the process and challenges nurses face when preparing and administering medications. We look forward to expanding this model to more settings where nursing and pharmacy complete experiential education together.

Poster Title: *Developing first year pharmacy graduates into qualified preceptors through a graduate preceptor development program*

Poster Type: Descriptive Report

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Purpose: This project describes the concept and implementation of a program designed to train newly graduated pharmacists who wish to provide future experiential education to pharmacy students by becoming qualified pharmacy preceptors. This voluntary, one-year program enrolls pharmacy students near the end of their PharmD education and is delivered in a format designed for busy working professionals who are interested in becoming effective pharmacy preceptors. Targeting recent graduates for preceptorship has many potential benefits including: increasing the preceptor pool with instructors who are already familiar with the program, expanding student placement, strengthening alumni relationships, and promoting continuous professional development.

Methods: A literature review was performed to identify exemplars already providing preceptor training targeted at new pharmacy graduates; little existing evidence was found. A needs assessment and interest survey was sent to 389 students and newly graduated pharmacists to determine interest as potential participants and to guide curricular development. Based on feedback from the survey, the New Pharmacy Graduate Preceptor Development Program was initiated for CO2015 students' final year of pharmacy school. In the week prior to graduation, when students return to campus for a final course, all students received a brief presentation and question and answer session introducing the program and describing requirements. All students were invited to attend a campus-based, one hour facilitated training session on the characteristics of good precepting as an introduction to the program. Through email follow-up, enrollees were provided with options to complete selected preceptor-related training via live or online delivery in a phasic fashion. Core program topics included: preceptor roles, developing rotations, and providing effective feedback. Enrollees were encouraged to complete 1 hour for phase 1 (Oct-Dec post-graduation) and 4 hours during phase 2 (January until eligible for preceptor licensure). To increase flexibility and recognize student driven content interests, enrollees could complete some or all of the program requirements through approved residency teaching certificate programs and other approved workshops and/or continuing education programs as deemed appropriate by the School.

Results: The needs assessment and interest survey of current students and recent graduates (n=128, 33% response rate) provided input regarding precepting interest and desired program delivery method.

Respondents expressed a preference of a combination of online and onsite development offerings. Survey results helped determine the final curricular topics included as core elements of the program. The CO2015 enrollees totaled 61 out of 92 graduates (66%), and those participants will be eligible for preceptor licensure in the state of Oregon in fall 2016. The impact of the program will be monitored by the Office of Experiential Education who will be reviewing metrics related to the goals of this program: 1.) Create a pipeline for alumni pharmacy preceptors (enrollment levels and conversion of enrollees to licensed preceptors and potential preceptors for program placements); 2.) Improve new pharmacy graduates' perceived effectiveness as pharmacy preceptors (surveys/solicited feedback); 3.) Support the efforts of residency teaching certificates (number of enrollees using residency certificates as part of hours fulfillment); and 4.) Keep alumni connected to the School of Pharmacy

Conclusion: This New Pharmacy Graduate Preceptor Development Program provides a unique opportunity to capture and train graduates early in their post-graduate careers. This method continues the School's training of students as Educators at a time that is critical in their transition after graduation. This development helps improve the quality of the preceptor pool that works with learners. The program also benefits the School by keeping a continuous pipeline of alumni preceptors in its preceptor pool. Further, the program allows for the School to fulfill its strategic goals, including building lasting connections with students and providing a mechanism for continuous professional development.

Poster Title: *Utilization of video technology and standardization methods to streamline the community pharmacy residency interview process*

Poster Type: Descriptive Report

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Purpose: The pharmacy residency application process can be stressful and complicated for both applicants and residency programs as it involves a significant time and financial commitment. In the past, our program struggled with time and resources to review applications and attend interviews. In recent years, our program has expanded to include more residency positions; therefore time spent interviewing applicants became more critical. This project was conducted to streamline the residency interview process in order to maximize the utility of the on-site interview and to decrease the financial and time commitment on the residency program and applicant.

Methods: Historically, the application process consisted of a review of the candidates' applications leading to an invitation for an on-site formal interview. Although an applicant may have appeared to be a qualified candidate for this program based on their application, it sometimes became evident during the on-site interview that this initial assessment was incorrect. This led to an inefficient use of resources for the program and the applicants. To address this issue, qualified applicants were invited for a preliminary video interview to evaluate their "fit" for the program. The video interviews took place over 2 days and were limited to 20 minutes per applicant. Each applicant was asked 6 questions based on the health system's service values and was also given the opportunity to ask questions about the program. Candidates with the highest scores based on application and video interview were invited for on-site interviews. In the past, applicants were asked to present on a topic of their choosing. This lack of standardization made it difficult to compare applicants. This year, applicants were asked to prepare an original presentation on the same topic: pharmacy service development. A written clinical skills assessment and counseling session were also added to this year's process, as this was not evaluated previously. Applicants were ranked based on their combined score from their application, formal interview, presentation, and clinical skills assessment.

Results: The program received 14 applications for Phase I of the Match. Eleven applicants were invited for an initial video interview. Nine of the applicants who completed the video interview were invited for on-site interviews. One applicant did not make it to the interview and another declined the interview after it was scheduled. We conducted 7 on-site interviews. Each on-site interview lasted 3 hours and

required the residency program director, program coordinator, preceptors, and residents to attend. Two candidates that would have otherwise been invited to an on-site interview based on previous years' requirements, were not invited to continue the interview process this year. Two 20 minute video interviews eliminated 6 hours of on-site interview time, which saved the health system approximately $1500. It is difficult to assess how much money these applicants saved, although both would have had to travel significant distances and would have likely spent resources on airfare, hotel, and spent time away from their clinical rotations. If our program continues to receive more applicants in the coming years, it can be expected that more resources will be saved

Conclusion: There is a lack of published literature evaluating the costs associated with residency recruitment for both the residency candidate and residency program, but these costs can be significant. Furthermore, given the growth in residency match participants and candidates' applications to multiple programs, we anticipate that recruitment expenditures will increase. Programs will need to streamline their recruitment processes to efficiently and cost-effectively assess qualified candidates. We believe that preliminary video interviews and a standardization of the interview process can help maximize the utility of the time spent with an applicant and help minimize expenditures for the program and residency candidates.

Poster Title: *Development of a research task force to support pharmacy resident research projects*

Poster Type: Descriptive Report

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Purpose: Pharmacy residents are faced with many challenges in developing comfort with the research process. At Rush University Medical Center, a research task force (RTF) was created to facilitate project proposal submissions, and serve as a resource for both residents and the research preceptors. The ultimate goal of the RTF was to increase the number of scholarly work of the pharmacy department as whole.

Methods: The RTF developed a standardized proposal submission form. Prior to each residency class a research preceptor completes a formal proposal for their research idea. The preliminary proposal is intended to facilitate a clear vision of the proposed project. Each proposal is reviewed by the RTF to ensure feasibility of data collection, completion within the residency year, study design, and impact on our health care system as well as potential to contribute to current literature, and likelihood of publication. Once the proposal is approved, it is presented to the Residency Advisory Committee for final departmental approval prior to presentation to residents. The RTF serves as a resource for the residents and research preceptors by developing timelines and residents accountability for progress through completion of status reports. The RTF coordinates practice presentation sessions for regional residency conferences and utilizes innovative methods to enhance preceptor attendance. The task force provides a longitudinal didactic research lecture series to enhance understanding of the research and publication process for both resident and preceptor development.

Results: Challenges encountered have included proposal submissions with requisite detail, development of a didactic lecture series that balances the enhancement of research skills and information overload, and scheduling the lectures at the most appropriate time in the residency year for maximal benefit. The ultimate goal of increasing the number of scholarly work has been attained with increased scholarly activity overall (93 in FY15 and 115 in FY16 to date). Increased activity was seen in each category (research, professional posters, publications, and presentations). Furthermore, scholarly activity is presented in increasing arenas with submissions to new meetings and general professional education.

Conclusion: The RTF has been successful by creating an infrastructure to support residents and preceptors in development, implementation, presentation and publication of their research projects. Process modifications have been implemented in the second year of the task force existence in order to

provide support to the highest areas of need without encroaching on the independent teaching style of each research preceptor.

Poster Title: *Development and evaluation of a longitudinal medication safety learning experience at a large community hospital*

Poster Type: Descriptive Report

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Purpose: To describe the longitudinal learning experience that was designed to familiarize the resident with the role of a pharmacist in medication safety. The goals of this learning experience were to assist the resident in developing the skills and expertise necessary to oversee medication error reporting and analysis as well as the development and management of medication safety projects.

Methods: Historically the medication safety learning experience was a two-week concentrated rotation completed in the second half of the residency year. Through feedback solicited from previous residents the following issues with this structure were identified: limited in scope, too late in the residency year to be meaningful, interprofessional collaboration was limited, unable to see a problem or process through to completion, and information learned from assigned readings was not able to be applied to practice. The learning experience was redesigned to be a 12-month longitudinal experience covering the American Society of Health-System Pharmacists (ASHP) Required Competency Objectives 2.1.3, 2.1.4 and 3.2.3. Six residents were grouped in pairs with each group scheduled once every three weeks with the preceptor to review medication errors reported in the online occurrence system. Additional days were scheduled in order to participate in medication safety related meetings. Activities for this learning experience included: staff education on medication errors and other safety topics through medication safety update presentations and pharmacy newsletter articles, creating reports and graphs from MedMarx for presentation at the interdisciplinary medication variance and quality improvement meetings, comparing the Institute for Safe Medication Practices (ISMP) best practice recommendations to current practice, managing the medication safety hotline, planning and implementing pharmacy week and patient safety awareness week activities, and participation in quality improvement and patient safety culture collaborative committees.

Results: The longitudinal experience afforded more opportunities for the residents to participate in medication safety related activities and projects. The total number errors reviewed and researched by the residents from last year to this year were 68 and over 300 respectively. This allowed the resident to not only analyze a variety of errors but also to evaluate the causes underlying repetitive events. The types of errors investigated included not only dispensing errors but also nursing administration errors. Through analysis of these reports, the resident gained an understanding of how various aspects of the medication use system impact patient safety. The total number of errors and adverse drug reactions reported by the residents themselves over the course of the year increased by over 10%. Under the

previous structure, each resident only attended one medication variance meeting. By designing this rotation as a longitudinal experience, each resident attended 3-4 meetings and progressed from being an observer to presenting and leading interdisciplinary meetings. Early awareness of system issues that can lead to medication errors made the residents more proactive in preventing these types of errors during order entry as well as allowed for collaboration with the system administrator team to complete small process improvements.

Conclusion: The development of a longitudinal medication safety learning experience was successful in providing the residents with experiences necessary to become more effective, safer practitioners.

Poster Title: *Speed journaling: A novel application of literature evaluation and presentation at a non-teaching hospital*

Poster Type: Descriptive Report

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Purpose: In the current medical environment, being able to convey essential information quickly and concisely is an important skill. In pharmacy education, the focus of a traditional journal club is to gain the skills needed to evaluate, interpret, and critique an article. The purpose of this activity is to expand on this foundation by developing the skill to briefly present the findings of a study in a limited amount of time that is comparable to the time typically spent in an encounter with another healthcare professional.

Methods: By incorporating three different concepts of presentation styles (journal club, "elevator pitch," and speed dating) into an activity, each participant practiced concisely presenting the findings of a recently published article multiple times. Post graduate year-one residents and students on Advanced Pharmacy Practice Experience (APPE) rotation chose an article they read and evaluated independently. An outline was developed by the preceptors on how to prepare for their presentation and was provided to the participants approximately two weeks prior to the activity. On the day of the activity, tables were set up in a hospital conference room for participants to sit in pairs. Each presenter had five minutes to present to their partner, with two minutes for questions and answers. At the end of seven minutes, the partner presented in the same manner. Groups then rotated and repeated the activity three additional times with different partners. Session debriefing and an online questionnaire assessed participant perceptions of this activity compared to traditional pharmacy journal clubs, as well as activity logistics and formatting. Questionnaires were distributed to participants after their first session, thus eliminating repeat response bias from the pharmacy residents and returning APPE students.

Results: The project was implemented December 2015 through April 2016 during four sequential APPE rotation periods. During this time frame, there were twenty-nine resident/student participants resulting in a total of forty presentations. Residents and students who participated more than once were distributed a post session questionnaire only after the first time they participated. Twenty-six questionnaires were returned for a response rate of 90 percent. The vast majority of respondents (88 percent) felt they learned how to concisely summarize and present pertinent information from a published journal article. Respondents (81percent) also felt that they will use the skills learned during the activity in their practice. Furthermore, respondents found that their presentation skills and listening skills improved with each round (89 percent and 85 percent, respectively). Twenty-one respondents

(81percent) felt that speed journal club is more interactive than traditional journal club. All of the respondents felt that speed journal club was at least as preferential as a traditional journal club and five respondents prefer only speed journal club. Eighty-five percent felt that five minutes was an appropriate amount of time to present.

Conclusion: Speed journaling was found to be successful and well received. Students and residents were educated on several topics in a short time period while enhancing their skills in oral communication and presenting medical literature concisely, all of which can be incorporated into their practice as pharmacists.

Poster Title: *Residency programs in Australia- better late, than never!*

Poster Type: Descriptive Report

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Purpose: Australian hospital pharmacy practice is at the forefront of contemporary pharmacy practice. Like ASHP, The Society of Hospital Pharmacists of Australia (SHPA) has driven development of hospital pharmacy practice over time through professional leadership, standards, advocacy, and training, to support the profession to deliver better health outcomes.
Australia has a structured intern (pre-licensure) training program and has recently completed a pilot program of advanced practice recognition and credentialing. However, unlike the USA where ASHP accredited residency programs have been established for 53 years, Australia has not yet implemented a formal program of post-graduate experiential learning via a national residency program.

Methods: If hospital pharmacy as a profession is to continue to deliver effective health care that meets the needs of the public, the Australian pharmacy workforce must evolve to ensure it has the capacity, capability and flexibility to function within an ever-changing healthcare system.
The Society's members at SHPA Future Summits in 2014 and 2015 supported SHPA developing models of clinical fellowships and residency-type programs to develop pharmacists to be able to perform expanded practice roles. In November 2015, the Federal Council of SHPA committed funds to a residency program project. A project manager was employed and a national project steering committee established. International models of pharmacy residency programs including those in the USA, United Kingdom and Canada have been reviewed. The SHPA program will be a two-year generalist residency in hospital, after the intern year, with the potential for an elective placement external to the 'home-site' hospital; for example, in an ambulatory care setting or rural/regional hospital. Progression to specialist residencies after completion of general residency will be explored in future years.
Hospital pharmacy department directors around Australia have been canvassed to gauge their support for residency programs and their capacity to change staffing establishment to accommodate residencies. Project deliverables include development of site selection criteria, competency framework, residency curriculum, accreditation standards, work based evaluation tools and resources and a process for site accreditation assessment.

Results: Anecdotal evidence suggests there is wide variability across hospital pharmacy departments in workplace training and support for pharmacists in their foundation years. Any experiential programs

offered by pharmacy departments are 'ad-hoc'; they lack structure including continual work based performance evaluation and feedback. Early feedback from SHPA members and hospital pharmacy department managers has been positive and there appears to be widespread support for the SHPA residency project. Curriculum development is being aligned with the UK Competency Development and Evaluation Group (CoDEG) Foundation Level Framework which SHPA adapted as a Clinical Competency Assessment Tool (SHPA ClinCAT). First phase hospital residency site selection will occur in June 2016 with sites located in all states and territories in Australia. The inaugural intake of hospital pharmacy residents will occur in 2017.

Conclusion: For a maturing profession, there can be no better grounding for establishment and recognition of a pharmacist's critical role in the medicine management team than a formalized practitioner development process. The lack of formal or structured experiential training programs post-registration (licensure) has been a barrier to the strengthening and expansion of pharmacists' roles and scopes of practice in Australia. SHPA's residency program, combined with a new program of advanced practice recognition and credentialing by the Australian Pharmacy Council will finally provide a structured developmental pathway for the Australian hospital pharmacy practitioner.

Poster Title: *Should antimicrobial stewardship program (ASP) training be required for all American Society of Health-System Pharmacists (ASHP) accredited pharmacy practice post graduate year one (PGY-1) residency?*

Poster Type: Descriptive Report

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Purpose: To compile results of a survey to characterize PGY-1 residency training for antimicrobial stewardship. Baseline knowledge of PGY-1 training for antimicrobial stewardship is unknown; this study assessed if newly trained PGY-1 residents entering the workforce would be prepared to provide ASP services as mandated by the Joint Commission. One of the core elements of ASP published by the center for disease control and prevention (CDC) is having a dedicated staff with demonstrated drug expertise to partner with the ASP physician leader to improve antimicrobial use.

Methods: An online survey utilizing Qualtrics™, was sent to 280 PGY-1 pharmacy practice residency program directors with a formalized ASP at the training institution. The survey was also sent to the American College of Clinical Pharmacy Infectious Disease-Practice and Research Network (ACCP ID-PRN) list serve to capture higher survey response rate for PGY-1 directors. Community pharmacy practice and managed care pharmacy residencies were excluded. Residency programs without current residents and institutions without a formalized ASP were also excluded. Participation in the survey was open for 30 days. Descriptive statistics were used for all analyses.

Results: Total of 76 responses to the survey was completed. Majority of respondents were from community hospitals (57.9%). Most PGY-1 residents (96%) were involved with ASP activities, and 89.5% of programs had a formalized ASP. Only 33% of programs required ASP as a rotation, 23.6% of programs had ASP as an elective, and 43.4% of programs had ASP as part of the infectious disease rotation. The top five most common activities residents performed daily during the ASP experience included renal dosing, intravenous (IV) to oral (PO) conversion, dose optimization, prospective antibiotic review and interventions on duplicate or unnecessary orders. There were five common actions performed by residents daily to collect or track data for ASP interventions. These included giving prescribes direct personalized communication concerning their antimicrobial prescribing, monitoring compliance of the specific interventions in place, monitoring adherence to facility specific treatment recommendations, monitoring adherence to a documentation policy for dose, duration, indication and lastly providing education to clinicians and other relevant staff on improving antimicrobial use.

Conclusion: To meet the 2017 Joint Commission standards for ASP, PGY-1 training should offer ASP as a required rotation to build the most well rounded resident.

Poster Title: *Incorporation of Topics and Reflection on Low Socioeconomic Status (SES) into Residency Training*

Poster Type: Descriptive Report

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Purpose: Patients of a low socioeconomic status (SES) experience many health disparities and challenges associated with their health care. Additionally, health care providers experience many challenges when caring for this patient population. A significant portion of the patient population served by St. Joseph Campus come from a low SES. Therefore, in order to provide optimal patient care, and train our residents to care for this patient population, education on topics relevant to patients of low SES needed to be incorporated into our residency training program.

Methods: Pharmacy preceptors were educated on topics relevant to caring for patients of low SES. Then, preceptors from each of the eight required rotations selected one topic relevant to caring for patients of low SES per rotation and incorporated this topic into each required rotation's residency training through at least one activity. Residents were encouraged to self-reflect on a customized objective relating to low SES in their individual plan. Results from the self-reflections were evaluated.

Results: Education on low SES was delivered via presentations by a case management nurse and a medication therapy management (MTM) pharmacist. Articles on low SES were also discussed by preceptors. Topics selected by preceptors included: challenges with post-hospital transition, end of life care, infections exacerbated by low SES, preference for hospitals over ambulatory care, misconceptions with neonatal abstinence syndrome and/or lack of adequate prenatal care, sense of abandonment after discharge, 30-day readmission and financial impact, and health literacy and medication adherence. The customized objective added to each resident's individual plan was "(Applying) Apply knowledge, skills, or tools developed from the rotation to effectively care for patients of a low-socioeconomic status." Residents reflected on their completion of this objective and the following are a few selected quotes from the residents' self-reflection:
"I feel like this activity increased my understanding of the difficulties that patients with low SES face. I was able to see this play out in a lot of the patients we encountered."
"I have developed techniques for better communicating with patients and speaking on their level as well as identifying their needs."

Conclusion: Reflections from residents indicated they acknowledged the importance of recognizing the potential impact of low SES on patient care and incorporated some of their knowledge and skills into their daily practice. In the future, this objective could be incorporated into each resident's individual plan, and evaluated within PharmAcademicTM.

Poster Title: *Panning for gold in a stream of data: qualitative program evaluation as a valuable tool for residency programs*

Poster Type: Descriptive Report

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Purpose: Quantitative evaluations are commonly used to evaluate individual learning experiences, but they do not provide a comprehensive view of trainees' broader program experience. For this reason, we chose to incorporate quantitative and qualitative assessments into our evaluation process. Focus groups are one way to gather qualitative data, but the data is difficult and time consuming to collect and analyze. We report our approach and findings from focus groups we conducted in an interprofessional post-graduate training program. We believe that these methods and lessons learned can be a valuable part of the evaluation effort for pharmacy residency programs.

Methods: Focus groups were conducted as one part of a comprehensive evaluation plan at the Boise VA Center of Excellence in Primary Care Education (CoEPCE). At the end of each academic year, starting in 2013, interprofessional trainees were invited to participate in a 1 hour semi-structured focus group session facilitated by a statistician and attended by professionals experienced in qualitative analysis. Focus group participants were divided by profession (pharmacists, physicians, psychologists, nurse practitioners and nurses). Questions covered areas such as program strengths/successes, challenges or weaknesses, outcomes, interprofessional collaboration, shared decision making and performance improvement. To foster psychological safety, the team didn't include a member of the profession being interviewed. CoEPCE faculty convened to analyze data using a grounded theory approach (Charmaz K 2012). The interviews were recorded and transcribed, data was organized using NVivo software (QSR International). We developed coding categories to encode the transcript data. Encoded data, organized into themes, was reported back to the program leadership via a standing operations meeting. At this meeting, robust discussion about the richness of the qualitative data was discussed in regards to the value the trainees' perceived about each program component. This information was compared with existing quantitative data enabling program leaders to make informed decisions about where to expend resources in the future. We will focus on lessons learned from the pharmacy resident data.

Results: Three major themes evolved from the pharmacy group data: First, workplace learning (learning that occurs while trainees work together in clinical settings) helps to solidify clinical roles and responsibilities. Second, dedicated time is needed for research and education. Finally, having pharmacy

residents co-located within the clinical space improves coordination of care. Workplace learning activities include an ambulatory care noon conference, an interprofessional case conference, sharing care in a primary care clinic, and an annual interprofessional conference. Trainees found workplace learning useful in understanding each team members' roles and responsibilities in patient care and reinforced how to use each discipline to its highest level. The data highlighted a need for dedicated time for education and research. Trainees have a desire to learn and do research, but lacked the time and resources. Having pharmacy residents embedded in the learning and clinical environments improved the quality of care coordination. Pharmacy residents confirmed that the more they worked with other trainees the more they were utilized at their full value in direct patient care.

Conclusion: Data from the focus groups were instrumental in program directors making curricular and program changes. Understanding common themes from focus groups and other qualitative assessments can support enhancing effective programmatic elements by downsizing or eliminating other less popular elements. We believe that the time involved in quantitative data collection and analysis is worthwhile in understanding the pharmacy residents' overall learning experience.

Poster Title: *PPD: Implementation of a professional presentation development longitudinal learning experience*

Poster Type: Descriptive Report

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Purpose: The ASHP standards for Postgraduate Year One (PGY1) required competency areas, educational goals and objectives were revised in 2014 prompting a revision of our previous learning experience descriptions (LED). A new longitudinal LED was developed that focused on self-assessment and developing effective presentation skills through delivery of the required residency presentations in the PGY1 program. The professional presentation development (PPD) longitudinal learning experience was implemented based on the new LED to meet the updated standards.

Methods: The PGY1 program at Henry Ford Hospital requires residents to develop and deliver seven formal and many informal presentations for successful completion of the program. These presentations are of varying types and include a continuing education presentation, multiple interactive presentations, and practice area-focused presentations, such as in the area of critical care. A new longitudinal LED was developed to provide assessment and development of PGY1 objectives R3.1.2, R4.1.1, R4.1.2, R4.1.4 using these required residency presentations. These objectives focus on development of effective educational strategies and self-assessment skills. Each resident was assigned to a presentation mentor for this learning experience and also attended three didactic small group sessions on presentation development skills early in the year. As part of this experience, residents received formative feedback after each presentation in either verbal and/or written form and were also required to self-assess their presentation skills. Summative feedback was discussed with the resident quarterly with their assigned preceptor. At the quarterly meeting, evaluation forms were reviewed and the resident developed and/or modified a plan for improving presentation skills in the following quarter.

Results: All residents successfully completed the PPD experience. The PPD experience was evaluated by the involved preceptors at the end of the residency year. Based on preceptor feedback and discussion, revisions to the experience were determined. Feedback included developing a template schedule to facilitate easier scheduling for subsequent years, staggering presentations for each resident to allow for balanced workload throughout the year, and modifying the LED to emphasize resident responsibilities such as sending evaluation forms to preceptors in a timely manner. Resident feedback was obtained

through an anonymous online survey. These changes will be implemented in the PPD experience for the next residency class.

Conclusion: Overall, preceptors at our institution felt that the new LED was beneficial for developing residents' skills to meet the revised ASHP standards. Changes will be implemented in order to strengthen the PPD experience for future residency classes based on current preceptor feedback. Planned changes include standardizing the presentation schedule and focusing on resident responsibilities in the LED. We will continue to assess the effectiveness of this ongoing learning experience.

Poster Title: *Incorporation of emergency preparedness activities into a PGY2 critical care residency program*

Poster Type: Descriptive Report

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Purpose: Emergency preparedness (EP) training ensures employees are ready to respond to mass causality disasters and public health situations. At Henry Ford Hospital (HFH), the multidisciplinary Emergency Preparedness Committee (EPC) oversees training and response to emergencies. Pharmacists advise health officials on pharmaceutical therapies and maintain the pharmaceutical inventory. Currently, the EP objective is an elective learning experience for the American Society of Health System Pharmacists (ASHP) PGY2 critical care (CC) residency and not all programs offer EP. At HFH, the PGY2 CC resident meets the objective through longitudinal EP activities. This study assessed the previous PGY2 CC residents' EP learning experience.

Methods: This was an observational study conducted at Henry Ford Hospital. PGY2 CC residents from 2010-2015 were surveyed on their emergency preparedness training activities. The survey was performed electronically using an online tool, was anonymous, and distributed via email. The survey consisted of a set of standardized questions evaluating EP training activities the residents was involved with. The survey also consisted of questions designed to evaluate the impact of the resident's EP training during their PGY2 CC pharmacy residency and how it helped them in their current position. The survey gathered information on how the HFH learning experience could be improved. Departmental, hospital, and regional emergency preparedness activities were evaluated. Descriptive statistics were performed.

Results: Of the 6 previous residents surveyed, 5 responded. The majority of responses (60 percent) were satisfied with their emergency preparedness learning experience. The number EP activities each resident participated in increased overtime. The type of activities also expanded from departmental to hospital and regional activities. These additional activities included resident participation in monthly HFH EPC, educating staff, and completing Basic Disaster Life Support training. Overall, 60 percent participated in departmental activities, 60 percent participated in hospital activities, and 40 percent participated in regional activities. All responses recommended prospective candidates seek PGY2 critical care residencies with emergency preparedness activities. Since completion of the critical care residency, 3 of 5 responses (60 percent) have not been in or are currently involved in EP activities. Of those that provided suggestions to further improve the learning experience, 3 of 4 responses (75 percent) indicated active participation in mock EP drills would be beneficial.

Conclusion: As the learning experience matured, PGY2 CC residents participated in a larger number of activities. Although the majority of responses have not been directly involved with emergency preparedness since graduation, all formers residents advise future candidates to seek a residency that offer emergency preparedness training.

Poster Title: *The Nuts and Bolts of Creating a Pharmacy Observership*

Poster Type:

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Purpose: Pharmacy observership programs fulfill a void for pharmacy students to gain early exposure to institutional pharmacy. Although IPPE rotations provide an introduction to hospital pharmacy, students continually seek opportunities to gain more experience in clinical and hospital pharmacy practice. Formal internship programs are available, but these are more common in the community, may require a longer time commitment, and may focus on one area of practice rather than allowing students to shadow a variety of pharmacists.

Methods: The observership program is publicized through direct communication with colleges of pharmacy. Selection of candidates include submission of a curriculum vitae and letter of intent. Candidates are further screened and selected based on short telephone interviews.

Results: The goal of the program is to provide pharmacy students with access to pharmacists in operational and clinical roles. The program's duration and shadowing experiences can vary based on the size of the institution. In addition to providing exposure to a variety of pharmacy practices, the program can provide opportunities for professional growth by offering résumé and cover letter development, mock interviews, participation in short projects related to medication safety and formulary management, and formal presentations.

Conclusion: Benefits to the institution include recruitment of prospective residents and future pharmacists and assistance with quality assurance projects. There is no unduly burden or cost to the institution as the observership is unpaid. However, having the support of pharmacy management and pharmacy staff is a significant factor in making a program successful.

Poster Title: *Developing a remediation plan for a pharmacy resident*

Poster Type: Descriptive Report

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Purpose: It is expected that pharmacy residents continuously improve their performance and clinical, professional, and educational skills throughout the residency program. If at any time, a resident's development is unsatisfactory and completion of program requirements for receipt of a residency certificate is at risk, the resident may be placed on probation. Each resident in this situation will have unique learning needs to get back on track, based on the specific areas in need of improvement. Thus, a standardized approach should be used to evaluate the resident's needs and to develop a remediation plan.

Methods: At the beginning of the residency year, each resident completes several surveys that serve as a baseline assessment of the resident's strengths (StrengthsFinder), experiences, knowledge base, and professional goals. These surveys are used along with a discussion with the resident to document a development plan. Resident performance is assessed on concentrated, rotational, and longitudinal learning experiences. The residency advisory committee evaluates this performance quarterly and may deem it appropriate to place a resident on probation, thus requiring a remediation plan. The standard method for development of the remediation plan used at our institution includes: identification of the specific areas in need of improvement, discussion of their top five strengths, selection of essential topics, and any special needs of the resident. Once these learning needs are identified, an implementation plan is developed that incorporates a variety of modes of delivery including direct instruction, modeling, coaching, and facilitation. An evaluation is also made to identify the best individual(s) to precept the remedial learning experience.

Results: The residency advisory committee identified a resident in need of remediation after the second quarter. A preceptor from the area requiring remediation, the residency program director (RPD), and Associate Dean for Postgraduate Education met to develop a remediation plan. Of the 30 disease states commonly encountered during the learning experience, eleven were selected as essential to demonstrate competence for the area. The preceptor selected 3-4 patients each morning for the resident to focus their attention. Additionally, the Associate Dean and resident met twice weekly for direct instruction related to patient cases. The resident's learning style was matched to the preceptor, which resulted in an increased emphasis in visual learning with greater use of diagrams and figures for illustration of information. An extra formal case presentation was added to the experience to improve communication skills. Additionally, the role of precepting for the resident students was removed to

allow for greater emphasis on clinical responsibilities. At the conclusion of the remedial period, the preceptor, RPD, and Associate Dean reassessed the resident's performance, along with a self-evaluation by the resident. Performance and self-confidence improved through the remediation process, resulting in satisfactory performance on the remaining learning experiences and successful completion of the program.

Conclusion: Residents who do not perform to standards during residency training may be at risk of not completing the program. A systematic approach is needed to identify a resident's learning needs and strengths in order to develop a plan which incorporates the optimal preceptors and modes of instruction. By standardizing the development of a remediation plan, the individual needs of the resident can be better met. This affords the resident the best opportunity for completion of the program and on-going success in their career.

Poster Title: *Development of an interprofessional medical ethics course*

Poster Type: Descriptive Report

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Purpose: As healthcare becomes increasingly complex, collaboration between disciplines is essential. In 2012, the Battle Creek VA Medical Center (BCVAMC) was awarded an interprofessional training grant for mental health education. Part of the grant required a focus on interprofessional teaching and learning activities. As such, an interprofessional medical ethics course was developed, consisting of pharmacy residents, psychology interns and residents, as well as optometry residents. The structure and content of this course will be reviewed.

Methods: The interprofessional medical ethics course was designed to allow for trainees to explore ethical dilemmas of everyday practice. This would be accomplished by reviewing cases in which ethical problems were encountered in order to examine real word application and complex decision making. The aim has been for trainees to explore these issues with guidance from experienced providers before entering independent practice. Additionally, learners could examine commonalities in practice to enhance interprofessional work throughout their careers. The course consists of ten, 90-minute, monthly sessions. The first session is an explanation of the course, an icebreaker activity and review of course responsibilities. Session two involves a trainee-led review of the principles of medical ethics. During sessions three through ten, participants take turns presenting individual cases encountered in their day-to-day practice, followed by group discussion of the ethical predicament presented.

Results: For the current course series, thirteen trainees and five preceptors participated. Challenges encountered through the experience included varying levels of familiarity with, and interest in, medical ethics, as well as a lack of knowledge regarding each discipline's role in health care. There was also occasional difficulty with trainees clearly communicating and understanding some of the more technical aspects of each of the respective professions. Ultimately, those involved in the course reported benefits in terms of increased awareness of ethical issues along with enhanced appreciation and understanding of other professions.

Conclusion: The interprofessional medical ethics course provided a valuable forum for fostering discussion of healthcare issues between different disciplines. Overall reception from participants, both trainees and preceptors, was positive. Future directions for the course include the development of a pre-post assessment tool, as well as continued emphasis on the role of each discipline in the introductory session.

Poster Title: *Thunderdome: On-the-Spot Formative Evaluations for Clinical Scenarios*

Poster Type: Descriptive Report

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Purpose: Standardized objective assessments of patient care skills are challenging to develop. Residents often have ample time and resources, during traditional rotations, to collect/analyze data and implement interventions, which doesn't always reflect time sensitive scenarios during practice. After consideration of the Objective Structured Clinical Examinations (OSCEs) used in some PharmD curricula, Henry Ford Hospital residency programs developed a focused clinical skill assessment, called "The Thunderdome". It's designed to provide an on-the-spot assessment of resident's clinical thinking skills with real patient scenarios that increase in difficulty throughout the year. Thunderdome is a standardized way to objectively measure resident's direct patient care skills.

Methods: Thunderdome is completed during orientation and quarterly thereafter. The clinical cases increase in acuity and complexity. Orientation focuses on warfarin and pharmacokinetic cases with residents completing 1 case of each. Quarters 1 and 2 focus on general practice unit (GPU) patients with one or multiple drug-related problems (DRPs), respectively. Quarter 3 involves patients in the intensive care unit (ICU) with multiple DRPs. Residents are presented with a case with 20 minutes to collect and analyze data and present a plan to their Thunderdome preceptor. Residents are paged randomly when a suitable case is identified by pharmacy clinicians. They receive verbal and written formative feedback on objectives 1.13, 1.14, and 1.15 upon completion of the exercise. Passing or failing Thunderdome is based on specific activities linked to ASHP objectives. There is a separate panel of preceptors that review the Thunderdome preceptor evaluations to further ensure standardization of skills and assessments. Failing a Thunderdome case requires the resident to re-enter Thunderdome. Outcomes with road-maps from Thunderdome are incorporated into the resident's training plan and presented at the residency advisory committee (RAC).

Results: All PGY1 residents (n=11) at Henry Ford Hospital participated in Thunderdome the 2015 to 2016 residency year. A total of 5 residents (residents A, B, C, D, and E) failed to pass Thunderdome throughout the year. All residents passed Thunderdome during orientation. During the first quarter, 3 residents failed Thunderdome; resident B due to inappropriate plan (OBJ 1.1.5) and residents A and C due to inadequate patient assessment (OBJ 1.1.4). In quarter 2, residents C and D failed due to inappropriate patient assessment. In the final quarter, residents D and E failed Thunderdome due to inappropriate assessments and plans for their ICU patient cases. All residents passed their Thunderdome cases upon

retry after plan customization was provided by the preceptor panel. The plan for each resident was customized to incorporate attention to the specific goals and objective which would help them improve clinical skills in the needed areas.

Conclusion: Thunderdome is a standardized approach to ensuring clinical skill development throughout the residency year. It has provided customization to resident training plans specifically in patient assessment and plan development skills. The Thunderdome is also a tool that has helped identify residents struggling with direct patient care skills earlier in the year.

Poster Title: *Concept mapping as a teaching method to facilitate critical thinking in pharmacists and pharmacy residents*

Poster Type: Descriptive Report

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Purpose: In Singapore, pharmacists can apply for PGY2 residencies in a specialized area if they have at least 4 years of work experience or after completing a PGY1 residency program. To better prepare pharmacists who are interested in applying for a PGY2 Geriatrics Pharmacy Residency Program, we explored using concept mapping to train and equip pharmacists and pharmacy residents with the necessary critical thinking skills to manage elderly patients.

Methods: Four learners participated in this pilot trial and they include 3 third-year pharmacists (preparing to apply for PGY2 residency in the following 1-2 years) and 1 PGY2 Geriatrics pharmacist resident. The activity of concept mapping is first introduced to the learners and was later applied to various topics such as hypertension, diabetes, hyperlipidemia.
For each topic, the learners first drew their own concept maps and later shared their maps with the rest of the group. The session facilitator (a senior pharmacist) then combined the map of the different learners to promote collaborative learning and also to help them identify where the gaps in their thinking lies (from the concepts that they did not think of when they were constructing their concept map). The learners then used the concept map to discuss patient cases that they have prepared. This concept mapping activity was held once a month and one topic was discussed per session. The concept maps were scored using a weighted scoring scale based on the structure of the mind maps.

Results: Learners' concept maps improved with each sessions with more interlinkages developed between concepts, moving from a spoke-like diagram to spoke- and-chains diagram to a net-like diagram. Scores improved for all learners and the more experienced PGY2 resident scored higher than the other learners. This showed that the learners developed an understanding of how to link concepts and the more experienced learner were able to organize her concept map with more concept links not seen in the learners with less experience. Application of the patient cases using the combined concept maps also helped learners to develop a management plan where different concepts are integrated into their plans such as consideration of the functional and social status of the patient and ensuring continued access to the medications recommended.
Feedback from learners were positive as they found the activity fun and useful in their learning and helping them to see the connections between different issues. Learner could also readily use the concept map to apply to their patients that they encountered in their daily work.

Conclusion: Concept mapping is a useful strategy to facilitate development of critical thinking skills in pharmacy resident and pharmacists. It also helps the teacher or facilitator understand how learners think about or approach a problem and guide them to form important relationships between concepts. Concept maps have been used in other studies in nursing or medical education to assess learner's thinking and reasoning processes. To the author's knowledge, this is the first time concept mapping is described in teaching pharmacists or pharmacy residents.

Poster Title: *Experience with an evidenced based medicine curriculum in a Post Graduate Year 1 pharmacy residency program*

Poster Type: Descriptive Report

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Purpose: Evidenced based medicine skills are considered an important component of clinical decision-making. Despite the rapidly growing evidence foundation the anecdotal practice of medicine still exists and can emerge in a busy clinical setting. We developed and implemented a longitudinal evidenced based medicine curriculum to equip new pharmacists with the essential toolkit of evidenced based medicine skills as a foundation for a career of practice excellence.

Methods: Cone Health is a 1000 bed community health system that has conducted an ASHP accredited pharmacy residency program since 1968. In 2007 the residency program director identified the need to refine the program's instruction in the basics of evidenced based medicine. She sent one interested preceptor to Information Mastery: Evidenced Based Medicine seminar with the charge of designing a longitudinal program. Core curriculum components were identified including: statistical methods, decision making process, research methods and design, quality of evidence, pharmaceutical industry representatives, and practical methods to provide evidenced based instruction. In 2008 the curriculum was implemented with a series of 5 interactive seminars during orientation followed by 4 required evidenced based medicine presentations and two follow up seminars. The program is assessed using the validated University of California, San Francisco's Fresno Test for Evidenced Based Medicine administered in the first week of the program and at the end of the year in addition to collecting structured feedback from residents.

Results: Since its launch in 2008 structured feedback on the evidenced based medicine curriculum from residents has been positive. Residents give routine praise to the practical focus of the seminars, especially in the areas of statistical analysis and communicating evidence. Incremental improvements are seen in the pre and post Fresno Test for Evidenced Based Medicine. Improvements are variable based on entering resident competence in evidenced based medicine. The quality of resident presentations after the program's implementation improved significantly. In 2010, the end of the year program structure was changed based on resident feedback to include four additional resident led discussion sessions on core statistical methods applied in various types of study design to reinforce key concepts and help prepare the residents for future board certification exams.

Conclusion: A longitudinal evidenced based medicine curriculum in a PGY1 pharmacy residency program improves the knowledge and the application of evidenced based medicine principles to pharmacy practice.

Poster Title: *Physical assessment training for pharmacy residents and fellows: a focus on the cardiovascular exam*

Poster Type: Descriptive Report

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Purpose: The ability to understand and perform components of the physical examination is essential for patient care pharmacists. Residents have varying degrees of training in this area during pharmacy school. An optional focused cardiovascular physical assessment training activity was developed for trainees of a residency and fellowship program offered by a school of pharmacy and major academic medical center.

Methods: A half-day physical assessment activity was developed and offered to residents and fellows enrolled in the training program. This activity was designed by three practicing pharmacists. Two have active ambulatory care practices and routinely perform the physical examination in their clinics; the other is an inpatient practitioner and a lead instructor for the school's patient simulator. Trainees were required to notify the organizers if they planned to attend. Participants were required to review an assigned reading on components of the physical examination prior to the live activity. Participants were assigned a partner(s), and a schedule of activities was provided in advance of the session. Trainees were asked to complete a brief survey and provide feedback to the organizers.

Results: Seven trainees participated in the activity which was held on a Monday from noon to 4 PM. Stethoscopes were provided to those who did not have one. There were four components to the activity. First, the two ambulatory-based practitioners delivered an interactive presentation on components of the physical examination. The focus of this discussion was on vital signs, heart sounds and evaluation of volume status. Second, a patient case scenario was given to the attendees, and the trainees worked with their partner(s) to develop questions and physical examination findings that would be required to identify the patient's underlying medical condition. One of the presenters served as the patient and answered questions posed by the trainees; physical findings were reported when requested. Trainees then rotated through two 30-minute stations. One station involved auscultating heart and lung sounds and examining pedal pulses on the patient simulator. Scenarios were developed in advance of the session. The other station involved practicing the physical examination and completing an online heart sound quiz. This station was moderated by one of the ambulatory care practitioners. Overwhelmingly positive feedback was received, and the participants provided suggestions on enhancing the activity moving forward.

Conclusion: This activity was relatively easy to develop as the necessary resources were available. Based on feedback, a physical examination training will be integrated into the program's orientation. The activity will be lengthened to seven hours to cover additional physical examination components and increase time with the simulator. This activity can be beneficial to those who will obtain vital signs and conduct the physical exam in their practice. This program can also benefit those who will not regularly perform the physical examination as it can allow trainees to have a better understanding and assess findings reported by others.

Poster Title: *Preceptor survey results at a PGY1 managed care residency: two year findings*

Poster Type: Descriptive Report

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Purpose: Ongoing preceptor development is an integral part of a residency program. The purpose of this project is to describe preceptor survey results from two annual preceptor surveys administered at an accredited managed care residency site.

Methods: Following accreditation site survey, a preceptor development survey was created by the residency program director. The first survey was distributed on 5/7/2014. The results were collected and compiled on 5/20/2014. The results were then discussed at a preceptor meeting held on 6/3/14, and four preceptor meetings occurred during the following 12 months. At each of these preceptor meetings, preceptor development and relevant topics were discussed. The survey was distributed a second time on 5/12/2015. The results were collected and compiled on 5/19/2015. The survey and results were then discussed at the 6/22/2015 preceptor meeting. Nonparametric statistics were calculated to compare responses on the preceptor surveys between the two data collection points.

Results: The preceptor survey developed for this study has provided valuable insight into how residency preceptors feel about the program and has determined areas that require additional attention. In 2014, 10 preceptors completed the survey and provided a response rate of 91% (10/11). In 2015, 9 preceptors completed the survey and provided a response rate of 75% (9/12). Statistical analysis of the survey results indicated that only “effectively precepting while meeting employment responsibilities” approached a significant difference between the two years. In 2014, 40% of preceptors found it to be the most challenging task. In 2015, 89% of preceptors found it to be the most challenging task. All other survey answers were statistically similar between 2014 and 2015. The majority (89%) of preceptors agree or strongly agree that they are comfortable teaching residents clinical problem solving. This increased from 80% in 2014 to 100% in 2015. Through the quality improvement process, one change to the survey was made the second year. In 2015, a fourth question was asked regarding the perceived benefit of preceptor development topics. In 2015, all respondents indicated that the preceptor development topics were perceived as beneficial (89%) or very beneficial (11%).

Conclusion: Factors that preceptors find challenging include: effectively precepting while meeting employment responsibilities and ensuring residents balance the activities of a rotation with the activities of overlapping rotations. Teaching clinical problem solving and providing residents with verbal feedback are factors that preceptors consistently enjoy with ease. The “effectively precepting while meeting

employment responsibilities" shift indicates the preceptors found this role more challenging in 2015. This may be attributable to the addition of a second resident in 2015 which resulted in more duties for all preceptors. The preceptor survey and related preceptor development initiatives at preceptor meetings have been well received.

Poster Title: *Development of resources and tools to promote the role of students as pharmacy department extenders at a large community hospital*

Poster Type: Descriptive Report

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Purpose: To describe our development of improved student programs, while simultaneously extending roles of our pharmacists and providing assistance in meeting department patient care initiatives.

Methods: Offering APPE and IPPE student rotations in a manner which is mutually beneficial to both the institution and students is challenging and difficult to maintain consistently. Historically, students from multiple colleges of pharmacy were oriented by individual preceptors for single rotations and/or non-consecutive multiple rotations. A pharmacy education specialist role was created to provide a more comprehensive and structured oversight of our student programs. Responsibilities of this role included: planning master student schedules, streamlining orientation months, facilitating preceptor recruitment and development, improving communication with colleges of pharmacy, oversight of longitudinal projects and managing day to day student activities. Resources and tools were developed by the pharmacy education specialist to overcome the challenges of training many students from various colleges of pharmacy. Monthly calendars, pre-recorded and live learning modules, and rotation to rotation competency checklists are examples. Training was developed to allow students to participate in various regulatory and medication safety initiatives.

Results: The creation of the pharmacy education specialist role enhanced communication and coordination with the various colleges of pharmacy. This allowed students to complete a minimum block of 4 consecutive rotation months. Student orientation months were reduced to 4 per year and staggered so experienced students were available to help onboard new students. Students completed competency based learning modules during orientation that provided a foundation for remaining rotations. The use of a checklist provided preceptors with documentation of the student's competency to perform patient care tasks. These included IV to PO conversions, renal dosing, antibiotic streamlining, anticoagulation monitoring, medication reconciliation, pain assessment and therapeutic drug monitoring. The block rotation structure allowed students to manage and complete a process improvement project. In addition, students provided assistance in the following areas: medication room inspections, central pharmacy medication bin audits and review of pharmacy related patient care orders. Increased structure of the student based program has led to increased staff acceptance and preceptor satisfaction.

Conclusion: The role of a pharmacy education specialist allowed for oversight, management and expansion of our programs. A more collaborative and structured approach to our student programs overall resulted in less burden to individual preceptors and a more productive approach to training a large number of students.