PHARMACY SNOW SYMPOSIUM
JANUARY 24-26, 2019

THE FUTURE DEPENDS ON WHAT YOU DO TODAY.

Round Table and Poster Guide
## Round Table Sessions

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1. **Title**: Are Pharmacists Ready for Prime Time? Clinical Caveats for Prescribing Hormonal Contraceptives
   - Evaluate patient medical histories in order to initiate and/or adapt contraceptive plans.
   - Review the development and implementations of hormonal contraception protocols.
   - Using various processes and tools, describe how to successfully implement pharmacist provision of self-administered hormonal contraception.
   Facilitators: Susan Mead, PharmD and Laura Borgelt, PharmD; University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences

2. **Title**: Relationship Building: The Role of Intercultural Learning and the Guided Debrief
   - Describe intercultural learning principles and their role in global health education curriculum
   - Identify where intercultural learning principles could be introduced and assessed within didactic and experiential coursework
   - Discuss intercultural student debriefs and their role in enhancing international advanced pharmacy practice experiences
   Facilitators: Ellen Schellhase, PharmD and Monica Miller, PharmD,MS; Purdue University College of Pharmacy, West Lafayette, IN

3. **Title**: Prescribing and Dispensing to Elite Athletes: What every healthcare provider should know about the WADA Prohibited List
   - Recognize the categories of WADA Prohibited Substances and Methods.
   - List references to search the status of prescription and non-prescription products.
   - Discuss the importance of clearance of substances prohibited in-competition, to be undetectable.
   - Recognize the prohibited substances that treat medical conditions, which require authorization to use, and direct athletes to the resources to apply for a Therapeutic Use Exemption.
   Facilitators: Ashley Anderson, RPh, MBA; U.S. Anti-Doping Agency, Drug Reference and TUE Department

4. **Title**: Braving the elements in pharmacy education: Snow, Sun, Wind, Sand
   - Network with pharmacy leaders to determine global goals for partnerships in education, with a focus on PWDGs 1-3
   - Consider how to implement PWDGs 1-3 in local academic settings
   - Contribute to a position paper which will be further developed at each of the pharmacy education conferences throughout 2019
   Facilitators: Tina Brock¹, Kirstie Galbraith¹, Catherine Duggan², David Steeb³
   ¹Faculty of Pharmacy and Pharmaceutical Sciences, Monash University Australia
   ²International Pharmaceutical Federation (FIP), The Hague
   ³UNC Eshelman School of Pharmacy, The University of North Carolina at Chapel Hill
Saturday January 26, 2019

10:00 – 11:30 AM

5. **Title:** Confronting interprofessional stereotypes to improve patient care
   - Describe potential stereotypes that healthcare students and providers from multiple disciplines may hold about one another’s profession.
   - Explore how interprofessional stereotypes may affect patient care in various healthcare settings.
   - Discuss strategies to confront and correct interprofessional stereotypes throughout healthcare training and practice.

   **Facilitator:** Allison M. Mann, PharmD, BCPS; Clinical Assistant Professor of Pharmacy Practice, University of Wyoming; Presbyterian / St. Luke’s Medical Center

6. **Title:** Implementing sustainable group visits with the diabetes prevention program (PreventT2)
   - Discuss the benefits of group visits for chronic disease prevention
   - Identify and address barriers to implementation of group visits for chronic disease prevention
   - Discuss the billing and reimbursement potential for group visits for implementation of the diabetes prevention program

   **Facilitator:** Leena Myran, PharmD, BCPS; Clinical Assistant Professor of Pharmacy Practice, University of Wyoming School of Pharmacy and University of Wyoming Family Medicine Residency Program at Cheyenne

7. **Title:** Experiential global health learning outcomes in pharmacy students: Implications for education and practice
   - Describe the value and importance of global health training in the pharmacy curricula
   - Describe a model for learning when students participate in global health experiences
   - Identify major learning outcome themes of international rotations for pharmacy students and how these differ by country location

   **Facilitator:** David Steeb¹, Ellen Schellhase, PharmD and Monica Miller, PharmD,MS;
   ¹ UNC Eshelman School of Pharmacy, The University of North Carolina at Chapel Hill
   ² Purdue University College of Pharmacy, West Lafayette, IN

8. **Title:** Educating the health practitioner workforce about cannabis
   - Describe pharmacology & pharmacotherapy of cannabis (article)
   - Identify key topic areas for pharmacists to seize cannabis expertise
   - Compare and contrast the various roles of the pharmacist regarding patient use of cannabis

   **Facilitator:** Kari Franson, PharmD PhD BCPP and Laura Borgelt, PharmD; University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences
## Poster Sessions

### Friday January 25th

**11:45 – 1:00 PM**

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<td>Healthcare Delivery is Culture, Not Science: Crucial Lessons in Implementing Collaborative Practice Agreements and New Delivery Models</td>
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Poster Abstracts

P1

Title: Providing Access to Telehealth (PATH)

Authors: Ryan Jackman, MD and Tonya Cook, PharmD

Abstract:

Introduction: The United States declared a state of national emergency in 2017 in response to the results of the National Survey on Drug Use and Health which showed that more than 150 citizens were dying daily from opioid overdose. Results also showed that 7.5% of the population older than 12 years old (20.1 million persons) have a substance use disorder. It’s estimated 10% receive treatment. Concurrently 4% of the population (10 million persons) live with a severe mental health condition, with 30% not receiving treatment. These realities are particularly difficult to address in rural communities, like Western Colorado (38% of state’s area, but only 10% of state’s population), where higher rates of poverty, underinsurance, substance use related deaths, and suicide rates are complicated by the barriers of fewer available services and distance traveled for treatment.

Practice change implemented: In order to meet the growing needs of primary care teams trying address substance use and mental health within rural Colorado the Providing Access to TeleHealth (PATH) project was started. Which provides 12 integrated primary care clinics in Western Colorado with telehealth access to a board-certified addiction medicine and doctorate level pharmacist also located in Western Colorado for 4 hours/month. With this time teams participate in case reviews, direct patient care, and quality improvement. While similar approaches have been effectively used for tele-psychiatry (IMPACT and DIAMOND) and population management (ECHO), PATH is a relatively new approach that combines these services while integrating numerous members of the medical team.

Aim/theory of change: The PATH project aims to: 1) develop telehealth infrastructure 2) expand knowledge and support of medical providers and behavioral health providers in rural Colorado to enable co-management of otherwise isolated patients, and 3) keep patients in their community (where possible) to continue care with their established medical team to decrease barriers and increase likelihood of care being received.

Population/stakeholders: Rural integrated primary care teams within Western Colorado with a focus on drug and alcohol use disorders and mental health care. Funding by Colorado Health Access Fund and Colorado Health Foundation for initiation and development of PATH.

Timeline: September 2017 - September 2018

Highlights: Through the use of existing online platforms all clinics have been able to participate with existing equipment, allowing for minimal training before implementation. At the one-year mark 160 unique patients had been seen, that otherwise may have required referral to an outside provider, including pregnant patients. Additionally, 5 sites have had provider(s) obtain additional training to prescribe buprenorphine, which was not a direct aim of the project.
**Sustainability/Transferability:** Given that the focus has been placed on co-visits with the physician or behavioral health provider present, there is limited interruption to the team’s workflow, and allows the team to schedule patients into the existing clinic schedule. Each of the 12 sites have clinic and staffing structures unique to their communities; despite this implementation of the services have been accomplished at each site. From the sites lessons have been learned and shared collaboratively to allow accommodation of PATH within all of the sites. These workflows allow for participation in other telehealth services if desired.

**Conclusion/discussion:** In rural America primary care physicians are faced with the task of addressing substance use and mental health disorders out of necessity, despite feeling unprepared to do so. PATH has identified and implemented practices that have resulted in positive patient clinical outcomes and satisfaction, improved continuity of care, and provider and site development. Telehealth is becoming an efficient and reproducible model in rural Colorado.

**Lessons learned:** The strongest sites have a telehealth coordinator and a streamlined PATH consultation process to identify possible patient cases in real time. Structured use of PATH time further maximized patient co-visits as well as provider and site development.
Title: Utilization of an inpatient HIV peer health worker program in a referral facility in western Kenya

Authors:
Presenting Author: Mercy Maina
Rakhi Karwa, PharmD1, Mercy Maina, BPharm, MPH2, Sonak Pastakia, PharmD, MPH, PhD1, Benson Njuguna, BPharm2, Timothy Mercer, MD, MPH3, Beatrice Jakait, BPharm, PharmD4, Adrian Gardner, MD, MPH4, Celia Ngetich, BPharm2, Regina Owino, PhD4, Juddy Wachira, PhD5, Fatma Some, MMed5, Monica L. Miller, PharmD, MS6 and Ellen Schellhase, PharmD6
1. Department of Pharmacy Practice, Purdue University College of Pharmacy / Purdue Kenya Partnership Eldoret, Kenya
2. Moi Teaching and Referral Hospital, Eldoret, Kenya
3. Department of Population Health, School of Medicine, Austin, TX
5. Department of Medicine, Moi University, Eldoret, Kenya
6. Department of Pharmacy Practice, Purdue University College of Pharmacy, West Lafayette, IN

Abstract:

Program: Hospitalized people living with HIV (PLHIV) in sub-Saharan Africa often present with advanced HIV and life-threatening infections due to late HIV diagnosis, low rates of engagement (linkage and retention) in HIV care, and poor antiretroviral therapy (ART) adherence. To improve adherence and encourage post-discharge engagement in outpatient care, we created an Inpatient HIV Peer Health Worker program with Moi Teaching and Referral Hospital (MTRH), the second largest referral hospital in Kenya, and with the Academic Model Providing Access to Healthcare (AMPATH). Two trained HIV-positive patients have been deployed to the adult internal medicine wards to provide the following services to hospitalized PLWH: assistance with engaging in outpatient care, medication and adherence counseling, delivery of ART refills, and post-discharge follow-up. The peers are managed by the Department of Pharmacy at AMPATH.

Justification: From April 2017 to May 2018, 1222 PLHIV were admitted to the adult internal medicine wards. The peers were able to interact with 980 (80%) of these patients. Peers provided the following services to this population: 2,422 counseling sessions, 520 medication refills and more than 50% of patients not enrolled in care were registered at AMPATH. Of the patients following up at AMPATH, 67% followed up in care at AMPATH within one month of discharge. Adaptability: The program leverages the experiences of having a shared disease state to effectively deliver disease and disclosure counseling, medication adherence counseling, and psychosocial support to PLHIV engagement in care through trained peer health workers. Lower costs associated with employing peer health workers could pose as an additional advantage.

Significance: In addition to providing counseling and ART refills on the wards, HIV peer health workers may improve patient follow-up post-hospital discharge. HIV peer health workers provide valuable information to medical teams that may assist in hospital treatment and post-discharge care.
Title: Healthcare Delivery is Culture, Not Science: Crucial Lessons in Implementing Collaborative Practice Agreements and New Delivery Models

Author: Edward Loomis, Founder & CEO Allergy Butler, LLC

Abstract:

Purpose: A real life case study that shows cultural headwinds that may prevent the implementation of Collaborative Practice Agreements and Advanced Practice Pharmacy models. Legality, safety, data, cost, patient access, and science are not considerations in the expanding role of a pharmacist.

Background: Allergy Butler is a clinical pharmacy that delivers allergy tests and immunotherapy in patients’ homes under collaborative agreements. Throughout 2017 and 2018 the Utah Medical Association, the Utah State Department of Professional Licensing, the Utah State Legislature, and the Division of Pharmacy fought a culture war over the issues of allowing pharmacists to do more than just ‘count pills’. The issue of allowing pharmacists to expand their practice became known as “The Allergy Butler Issue.” Other states are now fighting similar cultural issues.

Conclusions: For pharmacists and pharmacies wishing to expand into clinical services in conjunction with physicians, there are significant headwinds resting outside of what is “the legal practice of pharmacy.” States across America have liberalized the definition of the Practice of Pharmacy, yet there are major cultural obstacles to implementing legal collaborations. Cultural (not legal or scientific) issues around the way a collaborative agreement is written, method of communication between pharmacist and physician, who controls the medical records, reimbursement strategies, make up of your state physician/pharmacy boards, and choice of physician collaborators will all dictate if your clinical services will be approved by regulators. Legality, cost, patient safety, adherence, patient access, data and science are not considered in this arena.
Title: Pharmacist-Lead Team-Based Implementation of a Diabetes Prevention Program

Authors: Thanh-Nga Nguyen, PharmD, BCACP; Leena Myran, PharmD, BCPS; Ronald Malm, DO

Abstract:

Background: According to the Centers for Disease Prevention (CDC), more than 84 million US adults (1 in 3) have prediabetes.1 A 2001 study showed that a Diabetes Prevention Program helping people lose 5% to 7% (average 10 to 14 pounds) of their body weight through healthier eating and 150 minutes of physical activity a week can reduce the risk of developing type 2 diabetes by 58% (71% for people over 60 years old).2 Pharmacists can play an important role in resident physician education while improving patient wellness by collaborating with providers and nursing staff to implement a Diabetes Prevention program.

Purpose: to evaluate the effectiveness of diabetes prevention program delivered by an interprofessional healthcare team at a Family Medicine Residency Program.

Methods: We recruited physician faculty, resident physicians, pharmacists, and nurses to become facilitators for a diabetes prevention program. Volunteers were then registered for Diabetes Prevention Lifestyle Coach training via CDC certified program. Patients at high risk of developing type 2 diabetes were recruited from the family medicine clinic and in the local community. Participants are enrolled in a structured, year-long lifestyle change program. The program utilizes the evidence-based Prevent T2 curriculum available through the CDC.

Results: We have 8 trained lifestyle coaches; 1 physician, 2 resident physicians, 2 pharmacists, 2 registered nurses, and 1 medical assistant. We recruited 8 patients who have prediabetes or meet the eligibility criteria of high risk of developing diabetes for the August 1, 2018 program cohort. The class will end July 2019.

Conclusion: Team-based approach to diabetes prevention program may be a sustainable option for pharmacists to collaborate with physicians, physician residents, and nursing staff to improve patient wellness.

References


Title: A multi-disciplinary pain and sedation taskforce decreases exposure to opioids and benzodiazepines in critically ill children requiring mechanical ventilation.

Authors: Pamela D Reiter, PharmD, BCCCP; Erica Ferlin, RN; Gina DeMasellis, MD; Ryan Good, MD

Abstract:

Background: Analgesia and sedation is essential in caring for critically ill children and assists with comfort and safety during painful treatments and technical procedures. Excessive sedation, however, is associated with prolonged mechanical ventilation and hospitalization, as well as increased rates of nosocomial infections and delirium.

Objective: To characterize the effectiveness of a multi-disciplinary quality improvement pain and sedation taskforce on decreasing exposure to opioid and benzodiazepines in critically ill children requiring mechanical ventilation.

Design: Multi-disciplinary, quality improvement project in a large medical-surgical pediatric intensive care unit within a free-standing, tertiary care children’s hospital.

Methods: In 2016, a multidisciplinary group of critical care providers including pharmacists, nurses, advanced practice providers and physicians was created with the purpose of decreasing exposure to opioid and benzodiazepines in critically ill children requiring mechanical ventilation. Several interventions were implemented between 2016 and 2018 including: on-line (and live) educational courses for nurses and providers, creation of an interactive educational website, re-design of computerized order-sets, establishment of a pharmacy dispense dashboard to track medication use and integration of pain and sedation metrics into patient care rounding. Effectiveness of interventions was measured through multiple methods including: pre- and post-intervention surveys distributed to participating staff, a retrospective cohort analysis of patients requiring at least 3 days of mechanical ventilation and continuous analgesia and sedation from 2014 (pre-intervention) and 2018 (post-intervention) and an analysis of pharmacy administration data for continuous opioid and benzodiazepine infusions.

Main Results: Survey results (n= 56 pre-intervention and n= 49 post-intervention) revealed an increase in respondents who felt that medication titration instructions were always or usually clear (37% vs. 61%) and discussions of pain/sedation on rounds either always or usually occurred (62% vs. 81%). A comparison between 2014 data vs 2018 data revealed a substantial improvement in the 2018 data with fewer ventilator days (6.9 ± 2.9 vs 5.55 ± 2.4), shorter ICU stay (10.9 ± 5 vs 7.97 ± 4), a lighter level of sedation (SBS -2 vs -1), fewer continuous opioid days (6.8 ± 3.7 vs 5.4± 2.3) and fewer continuous midazolam days (6 ± 3.5 vs 3.17 ± 2.7).

Although the computerized order-set was used 100% of the time in 2018, strict adherence to patient-specific instructions by bedside nursing was not always followed. The administration rate (calculated by number of continuous drips administered per day divided by ventilator days) of most opioids infusions and midazolam infusions decreased during the study period while the administration rate of dexmedetomidine increased. Unplanned extubations were tracked as a balancing measure and the rate remained stable over the study period.

Conclusions: A multi-disciplinary, multi-faceted quality improvement approach to education and awareness surrounding goal-directed pain and sedation can result in lower administration rates of continuous opioids and midazolam in critically ill children requiring mechanical ventilation without increasing harm. Future work will be focused on improving nursing adherence to titration instructions and addressing the impact of delirium.
Title: Redesign and Evaluation of a Clinical Decision Support (CDS) Tool for Depression Screening in an Academic Medical Center

Authors: Naweid Maten, BS; Miranda Kroehl, MS, PhD; Shubha Bhat, PharmD, MS; Taylor Ota, BS; Sarah Billups, PharmD; Katy Trinkley, PharmD

Abstract:

Background:

The Centers for Medicare and Medicaid Services (CMS) have implemented quality measures to optimize depression management and outcomes. Specifically, CMS holds healthcare systems financially accountable for administering the 9-question Patient Health Questionnaire (PHQ-9) to monitor depression management. To aid healthcare systems in addressing this metric and optimize care for patients with depression, clinical decision support (CDS) tools within the electronic health record (EHR) can be used to remind clinicians to administer the PHQ-9 at appropriate times. Here we describe a CDS for PHQ-9 administration implemented at a large academic medical center, including redesign in response to clinician feedback and evaluation of outcomes.

Methods:

This was a retrospective cohort analysis of CDS for PHQ-9 administration. An active or interruptive CDS was redesigned in response to clinician feedback. The redesigned CDS was simplified and designed to be passive or non-interruptive. Both CDS recommended administration of the PHQ-9 to primary care providers during office visits with patients with most recent PHQ-9 of 9 or greater. All data was collected from the EHR, including automated reports and chart reviews. Outcomes of interest were characteristics of patients, clinicians and visits associated with CDS alerts and effectiveness of the CDS, defined as administration of the PHQ-9 and time to administration. Given provider response to the CDS may be different than actual action taken, manual chart review was completed to evaluate actual completion of the PHQ-9. Chi-squared test of independence was used to compare the original CDS during February 2017 to the redesigned CDS during February 2018.

Results:

The original CDS alerted 1,987 times for 504 office visits in February 2017 compared to the redesigned CDS which alerted 917 times for 502 office visits in February 2018. The median (IQR) number of alerts per encounter for the original and redesigned CDS were 3 (2, 5) and 2 (1, 2), respectively. The median age of patients the CDS alerted for was 51 years and most were female. Most visits during which the CDS alerted were preventative versus acute and with an attending physician versus other provider type. The original CDS resulted in the PHQ-9 being administered 77 times (15.3%) compared to 49 times (9.8%) with the redesigned CDS. Time to administration of the PHQ-9 decreased from a median (IQR) of 264 days (264, 479) with the original CDS to 229 days (144, 334) with the redesigned CDS.

Conclusions:

A CDS for PHQ-9 administration was redesigned from an active to a passive alert to optimize clinician satisfaction which resulted in less frequent alerting and PHQ-9 administration, but improved time to completion of the PHQ-9. Although PHQ-9 administration decreased some with the change to a passive or non-interruptive CDS design, the benefits of positive clinician satisfaction and minimal workflow disruptions may be a reasonable trade-off.
Title: Establishing Clinical Pharmacist Workflows in an Electronic Health Record

Authors: Katy E. Trinkley and Kari L. Franson

Abstract:

Background:

As the international role of the pharmacist continues to evolve, there are an increasing number of clinical pharmacists. Clinical pharmacists need to be supported by electronic health records (EHR), which are becoming the cornerstone of healthcare workflows. Because of the diverse needs of institutions, practice settings, and external drivers of patient care (government, insurers, culture), there is not a one-size-fits-all approach to customizing the EHR to support clinical pharmacists. To be effective, the EHR should be customized to the unique needs of the health system. Here we describe one process for designing and implementing EHR customizations to support institution-specific clinical pharmacists.

Methods:

To design and implement effective EHR customizations to support clinical pharmacists, implementers, stakeholders and influencing factors need to be considered. Implementers include clinical Informaticists and EHR analysts. Stakeholders include the clinical pharmacist end users, managers of the clinical pharmacists, and leadership of the specific health system. To ensure consideration of all influential factors and optimize satisfaction, acceptability and sustainability, frameworks from the field of implementation science and principles from change management are key. These frameworks and principles serve as checklists to consider and incorporate the dynamic interactions of the EHR, end users, external environment, and implementation and sustainability infrastructure. A key step to address the implementation science framework is observing and understanding the current workflows and needs of the health system (physicians, clinical pharmacists, other pertinent individuals), which is referred to as process mapping. Led by the implementers, process mapping and interviews with stakeholders serves to understand current and projected workflows to comprehensively support patient care activities, documentation, communication between care teams and patients, and efficient (ideally automated) collection of performance or outcome metrics. Clinical informaticists then provide direction to the analysts who execute the EHR build necessary to create the health system-specific changes to the EHR. The implementers then train end users how to use the customized EHR, provide training documents and are available for ongoing support once implemented.

Result:

The result is an EHR customized to meet the needs and priorities of the clinical pharmacist and health system. The EHR effectively 1) supports clinical documentation; 2) facilitates efficient and effective communication between patients and care team members; 3) supports clinical pharmacist-led medication management changes, decisions and communication of such plans to appropriate persons; 4) and when possible, efficiently collects data to inform key performance metrics; and 5) maximizes acceptability, adoption and sustainability.
Title: Pharmacists' perception of international PharmD (ITPD) training to meet local patient care needs

Authors: Shaun E. Gleason, Kari L. Franson, Jodie V. Malhotra; Dept. of Clinical Pharmacy, University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences

Abstract:

Background: The University of Colorado created the ITPD pathway within the School’s ACPE-accredited PharmD program for international pharmacists to meet local patient-centred pharmacy care (PCPC) needs.

Purpose: To evaluate trainees’ perception of program courses most relevant to their future PCPC plans.

Methods: Trainees completed written reflections on their ability to expand PCPC each semester, identifying relevant courses and plans to apply locally. Responses were recorded by topic theme.

Results: To date, 6 trainees from 5 countries completed multiple PCPC reflections (mean=6.8 of 9). Most frequently cited courses: N≥4 each [Patient communications (pt comm)], interprofessional education, advanced practice experientials, evidence-based medicine (EBM)/drug information); N=3 each (pharmacotherapy, clinical reasoning, public health, informatics, instructional methods). Local application plans include: Implementing pt comm activities=27 (i.e. pt and family=12, disease state=9, medications=6), educating peers and students=23, providing comprehensive PCPC=22, applied EBM=10, ethical practices (e.g., ethics, patient autonomy, cultural awareness)=9, applied pharmacoeconomics (including formulary management)=6. Further data will be presented.

Conclusion: PharmD training enhances international pharmacists’ ability to meet local PCPC needs. Trainees-identified local application plans focused on providing pt/family medication and disease-state education, implementing comprehensive PCPC, educating peers and students, and applying EBM and pharmacoeconomic principles to their practices. These data allow for further development of needs-based PCPC education.
Title: FIP Global competency framework priorities of international Doctor of Pharmacy (PharmD) students

Authors: Shaun E. Gleason, Kari L. Franson, Jodie V. Malhotra; Dept. of Clinical Pharmacy, University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences

Abstract:

Background: FIP created the Global Competency Framework (GbCF) to guide training. The University of Colorado’s international trained PharmD (ITPD) pathway is training for international pharmacists to meet local patient-centered pharmacy care (PCPC) needs.

Purpose: To evaluate student perception of how GbCF competencies (GbCFcomps) and/or ITPD courses meet local PCPC needs.

Methods: During the training, students completed written reflections on how their ITPD courses provided the skills to meet GbCFcomps and share their local plans to implement. Responses were recorded for each.

Results: To date, 5 students completed 9 reflections. GbCFcomps identified: Public Health=1, Pharmaceutical Care=2, Organization/Management=1, Professional/personal=5. Relevant courses: N=3 each (pharmacotherapy, interprofessional education), N=2 each (patient communication, instructional methods), N=1 each [evidence-based medicine (EBM), pharmacoeconomics]. Local application plans include: N=3 comprehensive PCPC, N=2 each [patient/family communication, peer education, applied EBM, ethical practice (eg. patient autonomy)], N=1 each [medication/disease education, interprofessional practice, formulary management, systems error advice, quality assurance and medication use evaluation]. Further data to be presented.

Conclusion: A PharmD education helps international student pharmacists achieve GbCFcomps and meet local PCPC needs. Most relevant GbCFcomps were Professional/personal and Pharmaceutical Care. These data allow further development of needs-based PCPC education and inform FIP on GbCF.
Title: Pharmacist-led peer delivery program for services and chronic medications to patients living with non-communicable disease in rural western Kenya

Authors:
Presenting Author: Ellen Schellhase
1 Academic Model Providing Access to Healthcare (AMPATH), Eldoret, Kenya.
2 Purdue University, College of Pharmacy, Department of Pharmacy Practice, Indianapolis, IN, United States.
3 Moi Teaching and Referral Hospital (MTRH), Eldoret, Kenya.

Abstract:
Program

The pharmacist-led peer delivery program provides services including point-of-care blood pressure (BP) and blood glucose (BG) measurements and chronic medications to patients living with non-communicable diseases (NCD) such as diabetes or hypertension. The program operates in two communities in rural western Kenya: Milo and Turbo, with populations of 14,000 and 35,000 respectively. Using pharmacist-developed clinical protocols, community health workers (CHWs), trained by clinical pharmacists and clinical officers, deliver these services based on patient- or provider-initiated requests.

Justification

We have documented that unavailability of medicines, distance to clinics and long queues are barriers to access to NCD care in our population. Patients often travel great distances to get to clinics, thirty minutes to several hours on foot or motorbikes. Our program remedies these barriers by: (1) utilizing a high-quality pharmacist-led supply chain system (revolving fund pharmacy) to ensure availability of medicines and (2) training CHWs (“peers”) using basic clinical protocols to appropriately triage and deliver management services (BP and BG measurements) and chronic medications to patients who need them. This delivery model was developed after a community needs assessment, in which, approximately 75% felt that a peer delivery program would address the above care gaps.

Adaptability

The adaptability of this program is largely due to its simplicity. Necessary components include patient interest, appropriately trained CHWs, a reliable supply chain and contextualized and culturally-appropriate clinical protocols. Additionally, CHWs are known and trusted community members who are qualified to provide basic medical tasks and medication delivery with appropriate training.

Significance

This program demonstrates that pharmacists can be effective in implementing care programs that provide critical NCD services in the community and outside of health facility settings. The goal of the program is to enhance adherence to medications and to improve clinical outcomes in resource-constrained settings, using a community-centered approach.
Evolution of an Experiential Focused Pharmacy Education Program within Eldoret, Kenya

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Abstract:

Program Background
Purdue University College of Pharmacy (PUCOP) has been a member of the AMPATH consortium which includes Moi Teaching and Referral Hospital (MTRH) and Moi University since 2003. PUCOP couples bilateral partnership with advancing patient care, education and research. The initial education program focused on experiential training for PUCOP students and Kenyan trained pharmacy interns who provided care on adult medicine wards with an international, interprofessional team. Although the positive impact of clinical pharmacists on patient outcomes is well documented in high-income countries, this data is lacking for low and middle-income countries (LMIC) likely due to challenges including poor essential medicine availability and healthcare worker shortages. The education programs created aimed to train pharmacists how to address these challenges and improve patient care. The demonstrated success of the Kenyan pharmacist intern’s abilities to apply knowledge and impact patient-centred care led the PUCOP team to expand and advance experientially focused training opportunities within Kenya. In this effort, an experiential based residency, Post-Graduate Diploma program (PGD) and Masters of Clinical Pharmacy (MS) program were developed in collaboration with local partners.

Impact
There have been, 50 interns, 15 PGD graduates, 7 currently enrolled MS students, and 216 PUCOP students trained within the individual education programs. Of these, seven have been retained as clinical pharmacists that have developed and maintained nine new patient care services which have directly impacted ~12,000 patients yearly. To house these programs, MTRH established the first Clinical Pharmacy Unit at a public-sector hospital within Kenya. Each program has been recognized by the Kenyan Pharmacy and Poisons Board and Moi University, allowing for replication throughout Kenya and other LMIC countries looking to advance patient care opportunities.

Conclusion
This education model has significantly advanced clinical pharmacy practice within Kenya through an impactful experiential training program that builds learners at various stages in their careers.
Title: Determining pharmacists’ ability to detect atrial fibrillation by utilizing mobile single-lead electrocardiogram systems (Alivecor/Kardia) in “Know Your Pulse” awareness campaigns.

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Abstract:

Background:
Atrial fibrillation (AF), the most common heart arrhythmia in clinical practice, presents significant morbidity and mortality to patients. The prevalence and incidence of AF continues to rise, potentially reaching epidemic rates in the next 10-20 years. Therefore, early and accurate detection is vital to ensuring patients’ risks are minimised. The AliveCor Kardia is an FDA-cleared personal use EKG monitor that provides a single-lead EKG reading within seconds. Due to the availability of high-quality EKG monitors, it is hypothesized that pharmacists and front-line healthcare practitioners might be able to aid in the detection and connection to care for patients experiencing AF symptoms. The primary aim of this descriptive study was to assess the pharmacists’ ability to identify people with possible AF using the AliveCor Kardia single-lead ECG

Methods:
This study took place during three consecutive AF awareness weeks in London, UK. Pharmacists along with key nursing staff enrolled patients on a voluntary basis for free pulse checks and health screenings to interested patients ≥18 years of age, regardless of past medical history, after obtaining written consent.

For any irregularity detected, individualised counselling and an immediate 12-lead ECG work-up or referral to a local general practitioner was provided. Upon referral, it was recommended that if AF was confirmed, anticoagulation should be offered in accordance with national guidelines. St. Bartholomew’s Health Clinical Effectiveness Unit granted ethical approval for this study.

Results:
A total of 1,298 patients were consented, of which 154 were excluded due to incomplete data. The data set included 1,144 patients for complete analysis, with a mean age of 54.99 years, median age of 57 years, and range of 18-101 years old. Of those analysed, 371 (32.4%) participants were ≥65 years old with 505 (44.1%) being female.

Of these 1,144 profiles, 37 patients (3.2%) were identified as potentially or knowingly being in AF while 62 patients (5.4%) were screened to have an irregular, but non-AF, heart rhythm and excluded. The 99 patients with irregular heartbeats were given information about AF and referred to their GP for a follow-up EKG and treatment as needed.

Conclusion:
Pharmacists in partnership with nursing staff were able to consent and screen patients at risk for AF. Those that screened to have an irregular heartbeat were connected to a GP to receive care highlighting the ability of pharmacists to utilize new point-of-care tools to aid in screening and connecting patients to care.
Title: Implementation of a cost-effective unna boot alternative as adjunct treatment of Kaposi Sarcoma in Kenya

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Abstract:

Background: In Africa, almost 25 million HIV diagnoses are made with 1.1 million opportunistic infection (OI) related deaths occurring annually. In Kenya, the OI Kaposi Sarcoma (KS) can be debilitating physically and psychosocially; magnifying the HIV stigma for patients. In other countries, an unna boot can be used as adjunct therapy for KS lesions, yet this product is too expensive and not commercially available in Kenya. The project objective was to develop a cost-effective unna boot kit (kit) using local resources.

Methods: A Purdue University student pharmacist at Moi Teaching and Referral Hospital (MTRH) in Eldoret, Kenya performed a literature review of the unna boot effectiveness for KS lesion resolution and healing which led to the development of a locally-sourced kit. The kit was piloted on a healthy leg to test ease of use, durability, and shelf life. After prototype pilot testing, the kit was produced by MTRH and usage guidelines were developed.

Results: The kit was integrated into the MTRH Oncology Clinic and expanded to X rural clinic sites. Each kit (medicated bandage, compression outer layer, exam gloves) cost $4 USD to produce in Kenya, compared to 10 times the amount in the US. Kits are utilized for patients with KS lesions and changed weekly.

Conclusion: Locally-sourced, cost-effective kits have increased the possibility of providing effective KS, and have the potential to change standards of care for KS patients in Kenya. A retrospective review of the kit usage and effectiveness for KS lesions throughout Kenya is underway.
Title: Pharmacy Education for the 21st Century Graduate: The New Work Reality

Authors: Galbraith K, Short, J, Malone D, Bruno A, Brock T

Abstract:

BACKGROUND: Australian data suggests today's 15 year olds will experience 5 different careers, and 17 employers in their working lifetime. The transition to traditional full time work is increasingly difficult. Factors shown to accelerate the transition from studying full time to full time employment include the development of enterprise skills. Recent evidence identifies courses teaching skills such as problem-solving, communication and teamwork can result in graduates achieving full time work 17 months faster than other graduates. In addition, healthcare continues to be less than optimal for many patients; some examples of poor patient outcomes can be closely linked to inadequate skills in healthcare practitioners.

PURPOSE: A new pharmacy curriculum was implemented in 2017, with a focus on skill development of its graduates. Eight skills were identified as important for pharmacist graduates: problem solving (& critical thinking), oral communication, written communication, empathy, reflective practice, integrity, teamwork, and inquiry.

METHODS: Students were introduced to the eight skills at the commencement of their degree. As part of a standard weekly cycle of instruction (Discover, Explore, Apply, Reflect [DEAR]), students are taught, have an opportunity to practice, and are regularly assessed on the key skills. Students used a modified Gibbs’ model of reflection (What? So what? Now what?) to consider their development. They record these reflections, the associated evidence, and their Personalised Learning Plans (PLP) for improvement in an in-house ePortfolio system. A designated skills coach provides feedback in the ePortfolio using a standard format (Keep, Start, Stop). Each cycle is followed by a skills team meeting, at a ratio of 10 students and one skills coach.

RESULTS: After two years of instruction in the new curriculum, the models of reflection, feedback, and skills coaching are well established. First year students complete a skills coaching cycle every two weeks with an academic skills coach, and second year students undertake the process three times each semester with a practitioner skills coach. The majority of students upload evidence with each PLP, and most have developed the ability to write learning plans that are Specific, Measurable, Achievable, Relevant, and Time based (SMART). Feedback from students, skills coaches, and experiential partners has been positive.

CONCLUSION: A specific and sustained focus in skill development has been identified as crucial to the success of pharmacy graduates. A program of reflection, feedback, and skills coaching has been successfully implemented in a new pharmacy curriculum.

Title: Syllabus Design as a Component of Preceptor Development

Authors: Toral Patel, PharmD, Jodie Malhotra, PharmD, and Joe Saseen, PharmD

Abstract:

Objectives: Develop rotation specific syllabi to meet requirements of the Children’s Cancer Hospital Egypt (CCHE) PharmD program.

Methodology: CCHE is offering a PharmD program in collaboration with University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences (SSPPS). SSPPS faculty facilitated a live preceptor development program at CCHE in 2017 for select CCHE clinical pharmacists. These pharmacists were experienced in precepting baccalaureate students, but never precepted PharmD students. Syllabus development was a primary focus of the program, assignments, and final evaluation. Participants were instructed how to develop syllabi that aligned with the structure and objectives of Introductory and Advanced Pharmacy Practice Experiences (IPPE and APPE). Individual rotation syllabi were drafted as homework, reviewed by peers and SSPPS faculty for feedback, were revised and submitted as a component of the graded final evaluation. Performance on the final evaluation determined acceptance as PharmD preceptors. Syllabi were evaluated on rotation description, objectives, calendar, pre-requisites, and assignments.

Results: Twenty pharmacists submitted a final syllabus. Developing rotation site specific learning activities was the most common area that needed improvement. Mean scores for individual components were: 88% (description), 93% (objectives), 86% (calendar), 86% (prerequisites), and 83% (assignments). Seventeen scored greater than 70% on the syllabi, with 16 also scoring 70% or greater on the cumulative final evaluation and were identified as PharmD preceptors.

Implications: Evaluating experiential syllabi enabled the selection of preceptors that understood requirements and structure of the PharmD program. This model was effective in ensures that preceptors incorporated experiential requirements into experiential syllabi.
Title: Pharmacist Led Patient Follow-up on Discharge Medications in Patients with Chronic Conditions After Hospital Discharge, KIMS Hospital and Research Centre, Bangalore

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Abstract:

Background: Diabetes and Hypertension are the chronic disorders emerging as major health problems which increase the rate of morbidity and mortality. Poor management of these two disorders is leading to several complications and end organ damage that ultimately impairs the health related quality of life (HRQoL) in the individuals. For the optimal therapeutic outcomes adherence to the prescribed medications and adopting required lifestyle modifications is very much essential. The incidence rate of Hypertension (HTN) depending on the age, ethnicity, and gender and body size lies between 3-18%. Most of these readmissions are the result of chronic disease progression in combination with inadequate post discharge care, which is a primary factor associated with preventable readmissions.

Methods: We performed assessment of medication adherence in 100 patients for those who were admitted with a clinical diagnosis of Type 2 Diabetes Mellitus and Hypertension or both in the Department of General Medicine, KIMS Hospital and Research Centre, Bangalore. At the time of discharge all patients were provided with education regarding their disease, adherence to medications, keeping a watch on their diet and life style modifications. The discharged patients were followed-up through telephonically for a period of 45 days from the day of discharge with an interval of 15 days between follow ups. Data on medication adherence was collected by using suitably designed questionnaire.

Results: Among the enrolled patients, 47 were males and 53 were female patients. Considering the age, it was found that 32 patients were between the age group of 40-50 years, 68 patients were of age between 51-60 years. Of those, 31 patients were diabetic, 22 patients were hypertensive and 47 patients were both diabetic and hypertensive. In our study, we found that 69 prescriptions were prescribed with antihypertensive drugs and 78 prescriptions were prescribed with antidiabetic drugs at the time of discharge from the hospital. All the patients who were enrolled into the study were counselled for medication adherence for the prescribed drugs at the time of discharge using Health Information Leaflets (HILs). We found that medication adherence for each patient was improving on every follow-up.

Conclusion: All the participants appreciated the follow-up program because; their medication adherence knowledge had increased and felt them safe; they were reassured about the appropriateness of their medications. It helped the participants to improve their health related quality of life. We found that patient education and ongoing communication are critical for patient understanding and medication persistence. The importance of counselling on medication adherence in chronic conditions and the collaboration between pharmacist and physician is very much important, which can bring down the patients hospital readmission.