IMPACT OF PHARMACY STUDENTS AS PART OF AN INTERPROFESSIONAL TEAM ON TWO INTERNATIONAL MEDICAL SERVICE BRIGADES TO ECUADOR IN COLLABORATION WITH TIMMY GLOBAL HEALTH

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Purpose: To assess the impact pharmacy students have on Ecuador communities while participating in medical service brigades. Secondary goals included examining the patient population, major medical chief complaints, and prescribing patterns.

Methods: Second and third professional year applicants selected completed pre-trip meetings and assignments prior to the brigade. As part of their experience, the pharmacy students rotated through various stations such as triage, lab, provider care, pharmacy. Data on the number of patients treated per day, referrals, prescriptions dispensed, and the types of disease states treated was collected using an electronic medical record.

Results: 634 patients from seven different communities were seen in Chontapunta in June 2014. The top diagnoses were parasites (28%), gastritis (13%), allergies (11%). Of the total patients seen, 48 patients (8% of clinic population) were referred to area hospitals for more advanced care. 472 patients from three different communities were served in Santo Domingo in October 2013. The top diagnoses were parasites (22%), headaches (10%), hypertension (9%). The most commonly prescribed medications on both brigades were acetaminophen, albendazole, and ibuprofen. Of the total patients seen, 139 referrals (29% of clinic population) were provided to patients to receive more advanced care.

Conclusion: Populations in both regions served in Ecuador had the same commonly prescribed medications, while the top diagnoses differed between sites. Additionally, the referral rate in Santo Domingo was much higher than that in Chontapunta.

Given the results obtained from two different medical service brigades, it is apparent that pharmacy students from D’Youville College School of Pharmacy have a large impact on the communities that are served by Timmy Global Health. Not only do these international brigades help foster a passion for global health, but provide students with unique interprofessional opportunities which make them worthwhile experiences for students.
EFFECT OF PART-TIME EMPLOYMENT ON ACADEMIC PERFORMANCE WHILE COMPLETING THE PHARMD CURRICULUM

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Purpose: The objective of this study was to describe student perceptions of the impact employment on academic performance.

Methods: This study was conducted at D’Youville College School of Pharmacy, a small private college in Buffalo, New York. Approval for this study was granted by the D’Youville College IRB. Data was collected from a survey in which students in the first three professional years of pharmacy school were asked to recall their GPA, the average number of hours worked weekly, and the type of employment setting (pharmacy and/or non-pharmacy). A five point Likert scale was used (1=strongly agree, 2=agree, 3=neutral, 4=disagree, 5=strongly disagree) to determine students’ concurrence with various statements regarding the impact of employment on academic performance.

Results: Out of a possible of 209 students, a total of 198 surveys (95% response rate) were returned and 183 were analyzed (89%) due to lack of completeness. Of the surveys analyzed, 27% of students felt that employment at a pharmacy and/or non-pharmacy job impaired their ability to study effectively. Eighty four percent of students surveyed felt that employment at a pharmacy and/or non-pharmacy job reinforced concepts learned in school. A small percentage (15%) of students felt that the PharmD curriculum should be treated as a “full time commitment” and that part time employment should be discouraged. No direct correlation was found (r=-0.03) between GPA and hours worked in either a pharmacy or non-pharmacy related job.

Conclusions: There was no consensus among students regarding the relationship between number of hours worked and GPA. This data suggests there would be no benefit to either encouraging or discouraging students from maintaining employment during didactic schooling.
FACTORS INFLUENCING CAREER DECISIONS OF STUDENTS ENROLLED IN ASSOCIATE DEGREE PROGRAMS IN DIETETICS

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Purpose: An associate’s degree from an accredited dietetics program enables graduates to write the Registration Examination and earn the credential Dietetic Technician, Registered (DTR). National data reveal 50-80% of those eligible elect to write the exam. The objective of this study was to determine factors that influence student decisions to write the exam.

Method/Process: Data were collected from students enrolled in associate degree dietetic programs in New York State (n=284). Chi-square testing for independence established significant relationships between student characteristics and writing the exam ($\rho \leq 0.05$). Fisher’s Exact Test was applied for frequencies < 5 in a 2x2 table. Logistic regression was used to determine which factors best predicted a student’s choice to write the exam.

Results: Seventy three percent (n=208) completed surveys were returned. The majority of respondents were white (72.6%), female (79.8%), and were 18-22 years old (58.7%). Ninety percent (n=184) of the respondents indicated they planned to write the exam upon graduation. Significant factors included the student’s current year in program and why they decided to pursue a career in dietetics ($\rho \leq 0.05$). Forty four percent of students felt the DTR credential would assist in launching their career.

Conclusions: Students value the DTR credential and plan to write the exam upon graduation.
Purpose: Interprofessional education is a method to create an environment that fosters interprofessional communication, understanding the roles and responsibilities of each profession, learning the skills to organize and communicate information for patients, families and members of the healthcare team. Providing interprofessional education to health professional students can prepare them in the workforce to have the necessary skills to function in a collaborative practice ready environment. The study was to demonstrate the methods used in developing IPE curriculum, faculty training as debriefers/facilitators, identify learning objectives and outcomes.

Design/methodology/approach: The faculty and student surveys utilized a Likert scale. Learning objectives for the student survey assessed learning objective including communication of roles and responsibilities, communication and organization of information, engagement of other health professions in shared patient-centered problem-solving, interprofessional assessment of patient status and preparation of patients from transition of care to home. The faculty survey assessed faculty experience levels in interprofessional education, role as facilitator/debriefer, and future needs for sustainability of the program.

Findings: Student evaluation of IPE simulation experience revealed students believed they improved their interprofessional communication skills and had a better understanding of health professional roles and responsibilities. Faculty feedback indicated a continued commitment to IPE however additional training and development were identified as areas of need.
Objectives: To assess health care providers’ perceptions of a health plans’ incorporation of motivational interviewing, using an interdisciplinary approach, to facilitate behavioral change among patients.

Methods: Fifty five health providers from various disciplines participated in motivational interviewing (MI) training. Participants included dietitians, pharmacists, nurses, social workers, health promotion specialists and health coaches. Each participant attended a two-hour introductory session on the “spirit” and principles of MI which included step-by-step applications to case scenarios. For three consecutive weeks, providers attended a one-hour practicum training session in interdisciplinary groups of six. Each participant played provider and patient roles and provided feedback on what worked well and how to “fine tune.” Following completion of the training, participants were sent an online survey via Qualtrics™. Questions included both quantitative and qualitative measures including perceptions on: 1) value of MI training, 2) ability to apply MI techniques, 3) benefit of working within interdisciplinary teams, and 4) existing or potential barriers to apply MI and how to overcome them. Quantitative measures used a five-point Likert scale to assess responses. Open-ended questions were used to add detail and meaning to selections.

Results: Forty-nine participants responded to the online survey. Among respondents, 89.8% reported that the practice sessions helped them to apply MI and 87.8% felt confident they could use MI in their practice with 88.7 % reporting that they had already started using MI. Most participants thought the MI training in an interdisciplinary context was beneficial (83.3%). They all reported that feedback from their peers was helpful. Comments about barriers included lack of time to interact with patients, difficulty to apply MI techniques over the phone, and resistance from patients.

Conclusions: Providers perceived the hands-on training, and feedback in an interdisciplinary group, helped them to appropriate MI and incorporate it into practice.
THE EFFECT OF A STANDARDIZED TRAINING PROGRAM ON PROVIDERS’ KNOWLEDGE AND CONFIDENCE IN COUNSELING INDIVIDUALS ABOUT END-OF-LIFE TREATMENT OPTIONS

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When older adults are asked about their end-of-life wishes, the overwhelming majority report that they would like to die in their own homes and be surrounded by family and friends. Unfortunately, few adults have actually put these wishes in writing. Nationally, less than 30% of adults have completed any advanced directive documents.

Health care providers often find themselves having end-of-life discussions with patients’ families when an unexpected illness occurs. Having these sensitive conversations under such stressful conditions is difficult for patients and their families as well as health care professionals. Participation in a standardized, training program can provide professionals with the tools necessary to more comfortably engage patients and families in meaningful end-of-life discussions.

Health professionals who attended an End-of-Life Training Program were recruited to complete pretest and post-test surveys related to the impact of this training program. Descriptive statistics were calculated and presented in narrative and tabular formats.

Providers who participated in a standardized end-of-life training program report having more confidence in their ability to encourage patients to complete health care proxies. Patients who receive care from providers with specialized end-of-life training are expected to have higher rates of health care proxy completion which will help assure their wishes are known before serious illness occurs.
INFLUENCE OF TYROSINE KINASE INHIBITORS ON OATP1B1 FUNCTION

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Background: Numerous biological and pharmaceutical compounds are recognized by the hepatic uptake transporter OATP1B1. Genetic variation or potential drug-drug interactions involving OATP1B1 can alter systemic levels of pharmaceutical agents and influence drug efficacy or toxicity. Various tyrosine kinase inhibitors have been shown to alter the systemic levels of commonly used anticancer drugs by a mechanism that remains unknown. We hypothesized that particular tyrosine kinase inhibitors can inhibit OATP1B1 function.

Methods: Uptake of estradiol-β-glucuronide and 8-fluoro-cAMP were assessed in vitro using HEK293 cells transfected with either OATP1B1 or an empty vector in the presence or absence of FDA approved tyrosine kinase inhibitors. The importance of potential tyrosine phosphorylation sites on OATP1B1 function were also assessed in HeLa cells transfected with tyrosine to phenylalanine mutants of OATP1B1.

Results: Cells over-expressing OATP1B1 displayed increased uptake of estradiol-β-glucuronide and 8-fluoro-cAMP compared to vector control. Twelve of the 23 FDA approved tyrosine kinase inhibitors were capable of greatly reducing OATP1B1 function (P < 0.05). Additionally, mutation of tyrosine residues with the potential to be phosphorylated also decreased function of OATP1B1 (P < 0.05).

Conclusion: We found that particular tyrosine kinase inhibitors, specifically nilotinib, can significantly reduce the function of OATP1B1. Moreover, we identified tyrosine residues that contribute to OATP1B1 function. Considering the rise in combinational therapies, these findings might benefit future therapeutic strategies by identifying potential drug-drug interactions that can lead to devastating toxicities.
Transforming growth factor-β1 (TGF-β1) is a member of the TGF-β superfamily of cytokines which are involved in a wide variety of biological functions such as proliferation, differentiation, migration, and apoptosis. TGF-β1 binds to a receptor complex and stimulates a set of signaling events leading to changes in gene expression and cell behavior. TGF-β1 specifically has been shown to be a key player in wound repair and modulation of the immune response. In these studies we identify a novel target of TGF-β1, the interleukin-1 family member interleukin-33 (IL-33.) IL-33 functions as an alarm in signaling the immune system to the presence of tissue damage. These studies showed that this regulation was specific to TGF-β1 and occurred in both epithelial and mesenchymal cells. Furthermore we utilize the 12-O-tetradecanoylphorbol-13-acetate (TPA) induced model of skin inflammation to determine if repression of endogenous IL-33 by pretreatment with TGF-β decreases TPA-induced inflammation.

These studies identify a novel therapeutic target for treatment of diseases such as psoriasis, asthma and Crohn’s disease. All of these diseases are associated with elevated levels of IL-33 as well as altered TGF-β responses. Further investigation of the immune cells affected by repression of IL-33 could provide information into the specific mechanism of action.
ASSOCIATIONS BETWEEN EIGHT AREAS OF SOCIALLY RESPONSIBLE LEADERSHIP AND THREE AREAS OF ACHIEVEMENT GOAL ORIENTATION AMONG FIRST-YEAR PHARMACY STUDENTS

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Objectives: The primary objective was to evaluate the relationships between the eight areas of socially responsible leadership and three areas of achievement goal orientation. The secondary objective was to determine whether gender and or age made a difference in the strength of these relationships. Method: Socially responsible leadership was assessed using items from an instrument developed by Tyree (1998). Using Likert scaling, the 68-item Socially Responsible Leadership Scale measures subject responses on the following areas: change, citizenship, collaboration, commitment, common purpose, congruence, consciousness of self, and controversy with civility. Achievement Goal Orientation was assessed using the 16-item Achievement Goal Orientation Questionnaire developed by Elliot and McGregor (2001). The three areas of goal orientation are: mastery-approach, performance-approach, and performance-avoidance. Results: 73 out of 76 Doctor of Pharmacy students (37 female, 36 male) ranging in age from 22 to 32 years taking a first year health care systems course voluntarily responded to the anonymous survey. The mastery-approach area of achievement goal orientation appears to be strongly related to the citizenship and commitment areas of socially responsible of leadership. Furthermore, the performance-approach area of achievement goal orientation appears to be strongly related to change, collaboration, common purpose and congruence areas of socially responsible of leadership; whereas, the performance-avoidance area of achievement goal orientation appears to be strongly related to consciousness of self and controversy with civility area of socially responsible of leadership. Neither age nor gender made a difference in the strength of these relationships. Implications: This study provides novel information for the design and effective teaching of pharmacy students as it approaches leadership as a purposeful, collaborative, values-based process that results in positive change. Further research will be conducted to compare student responses longitudinally through the four year curriculum.
THE VICTORIAN NOVEL, SERVICE WORK, AND THE NINETEENTH-CENTURY ECONOMY

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Gooch offers a much-needed study of the novel’s role in representing and shaping the nineteenth-century service sector. Arguing that prior accounts of the novel’s relation to the rise of finance have missed the emergence of a wider service sector, Gooch traces the effects of service work’s many forms and class positions in the Victorian novel. The novel registers the Victorian era’s changing economic circumstances and political economy’s increasingly fraught understanding of unproductive labor through its own work of narration, characterization, and plotting, and, in the process, comes to reimagine what it means to be employed and to see oneself as an employee. Novels by George Eliot, Charles Dickens, Wilkie Collins, Anthony Trollope, and Bram Stoker uncover the cultural, social, and affective experiences that inform these new experiences of work, from their revolutionary potential to their new forms of discipline.
A RARE PRESENTATION OF UPPER EXTREMITY RADICULOPATHY IN AN ADULT WITH CYSTIC HYGROMAS: A CASE REPORT

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Objective: This case report is to describe the chiropractic management of upper extremity radiculopathy diagnosed as a double crush syndrome in an adult with rare reoccurring cystic hygromas.

Clinical Features: A 35-year-old woman presented with a six-month history of numbness and tingling in the 1st and 2nd digits of the right hand. The onset presented suddenly with no history of trauma. Inspection and palpation revealed a cystic mass in the right supraclavicular fossa. Orthopedic assessment revealed a Tinel’s sign at the right carpal tunnel, positive Allen’s test for thoracic outlet syndrome, and a diminished right radial pulse.

Intervention and Outcome: The patient was treated using chiropractic care, which consisted of manipulative therapy to the thoracic spine, myofascial release therapy, and therapeutic ultrasound over the right carpal tunnel. Active home care included postural relief exercises and education about work-related ergonomics. She demonstrated subjective and examination improvement of her numbness and tingling within the first two weeks of treatment. Over a series of 8 treatments, her symptoms into her right upper extremity ceased.

Conclusion: Chiropractic treatment consisting of thoracic manipulation, soft tissue mobilization, therapeutic ultrasound, and education on workplace ergonomics reduced the symptoms of upper extremity radiculopathy in a patient diagnosed with a double crush syndrome. Further study is necessary to investigate the long-term effects of chiropractic treatment in a patient with upper extremity radiculopathy secondary to a cystic hygroma resulting in a suspected double crush syndrome.
The BRIC countries – Brazil, Russia, India and China are experiencing economic setbacks and it might be the time to buy equities in their companies. In recent years these countries were noted because of their rapid economic growth. Between 2000 and 2008, they averaged annual GDP growth expansion of 8%, almost 6% below the average for the G7 countries. Now, slower economic growth is causing their stock markets to tumble, presenting an opportunity for investors to buy what others are fleeing. The BRIC markets now look cheap based on their corporate profits and dividends as will be evident in the ratio table below. Their long term prospects remain bright, however. Well known economist Jim O’Neil feels the BRICs will still outperform the more developed nations. China’s growth will slow to 7% from 10%. India is projected to grow more than 10%, Brazil by 5%, and Russia by 4% since its economy is the most dependent on energy production and oil prices have most probably peaked.

Multinational energy companies are some of the largest and most powerful businesses in the world. Historically the largest companies in this field were based in Western Europe or the United States. This is mainly due to the large amounts of capital needed for energy exploration and western countries having more developed capital markets. This paper provides a financial analysis of oil companies in the BRIC sector:

- Petroleo Brasileiro (Petrobas)
- Lukoil Oil
- Gazprom
- Indian Oil
- Reliance Industries
- Sinopec
- China National Petroleum Co.
Evolution both explains what biologists have observed and predicts what biologists might observe through research. Because of its power to scientifically explain and predict, science organizations have called for a level of instruction on evolution that matches its central, unifying status in biology. The Measurement of the Acceptance of the Theory of Evolution (MATE) survey has 20 statements that a respondent evaluates (by agreement or disagreement). I transcribed the MATE into an online survey that was delivered to Introductory Biology students by e-mail at three colleges: D’Youville College, Texas A&M University at Texarkana, and Texarkana College. Five survey items captured descriptive demographic information: Gender, ethnicity or race, religious identity, academic major, and academic class. The average acceptance score for evolution was 69.6 (s=16.20, N=140) out of a possible 100 points. The three survey items where students were most undecided about evolution were: 1) With few exceptions, organisms on earth came into existence at about the same time, 2) The theory of evolution cannot be tested scientifically, and 3) The theory of evolution cannot be correct since it disagrees with the Biblical account of creation. Statistical analysis found that the overall acceptance of evolution was dependent on the student’s religious identity or the college that they attended. By using this survey in Introductory Biology at three different and distant colleges, I identified the evolutionary concepts that Introductory Biology students generally have difficulty accepting. This information can be used to develop a strategy to address student misconceptions. Lastly, a unique aspect of this study is that this is the first case in which the MATE has been simultaneously used at three colleges. All prior studies with undergraduates were limited to one college and the comparison of majors.
VENOUS THROMBOEMBOLIC EVENTS ASSOCIATED WITH HORMONAL CONTRACEPTION AND PATIENT EDUCATION PROVIDED BY INPATIENT PRACTITIONERS

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Purpose: The purpose of this study was to characterize contraception use in young, female patients experiencing a venous thromboembolism (VTE), and to assess a need for pharmacy intervention regarding practitioner knowledge of risk of VTE with CHC’s and appropriate patient education regarding future use.

Methods: A retrospective chart review was performed for patients hospitalized for VTE from October 1, 2012 to December 31, 2013. Patients were included if they were female, < 60 years old and on hormonal contraception at the time of VTE discovery. Exclusion criteria included females on hormonal agents for non-contraceptive purposes (i.e. hormone replacement therapy), pregnant females, and females with a history of VTE, cancer, and/or recent surgery. Data collected included type of hormonal contraception, smoking status, hypercoaguable disorder information, practitioner therapeutic intervention preformed, and practitioner documentation of patient education on future use of hormonal contraception.

Results: Of the 131 patients identified, 14 (10.7%) met inclusion criteria. The most common hormonal contraception (20%) was the CHC Ethinyl Estradiol and Etonogestrel (NuvaRing®), followed by Ethinyl Estradiol and Desogestrel (Kariva®) and Ethinyl Estradiol and Levonoregestrel (Jolessa®) (15% each). Practitioners discontinued hormonal contraception in 42.9% of patients and counseled the patients to avoid future use. Four patients had no documented mention of discontinuation or counseling on avoidance of future use. Two patients were discovered to have hereditary hypercoaguable disorders. One patient was continued on prior to admission CHC, Ethinyl Estradiol and Etonogestrel (NuvaRing®), upon discharge. Of the included patients, 13 were non-smokers and one patient had an unknown smoking status.

Conclusion: There are opportunities for practitioner in-servicing, provided by pharmacy personnel, regarding education of patients on the risks of VTE with CHC and future hormonal contraceptive use after experiencing a VTE.
GAP JUNCTIONS INFLUENCE THE INVASION/MIGRATION POTENTIAL OF MELANOMA CELLS TOWARD SPECIFIC HORMONES

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Cancer metastasis is influenced by chemoattractants in the blood stream which include hormones, growth factors, and cytokines. We recently developed a novel invasion assay with the goal of identifying specific targets that drive cell migration and invasion. This technique compares the ability of cancer cells to migrate and invade through an extracellular matrix toward a chemoattractant present in blood serum. The migration/invasion assay is then repeated in the presence of charcoal-stripped serum which specifically removes the hormones, growth factors, and cytokines from serum. Individual components are then reintroduced with the goal of identifying molecules that may be responsible for driving tumor cell invasion. Since gap junctions are regulated during tumor cell invasion, the role of gap junctions in mediating melanoma invasive potential was investigated. The assay tested metastatic 1205Lu melanoma cells that were modified to express three different levels of gap junctions: endogenous low levels, increased levels, or an absence of functional gap junctions due to transfection with a dominant negative mutant connexin protein. We specifically assayed progesterone, estrogen, and thyroid hormone as potential driving forces of cell migration/invasion. Our preliminary results demonstrate that there are differences with respect to migration and invasion toward hormones which are dependent on the level of gap junctions. This suggests that the ability of cancer cells to migrate towards a specific permeant may be altered by the extent of cell communication. Since cancer cells typically express lower levels of gap junctions and connexins act as tumor suppressors, it is important to determine how gap junctions influence chemoattraction. This novel invasion assay may be useful for identifying molecules that enhance or inhibit tumor cell metastasis for future drug design.
Patient no-shows have serious health implications for the patient and financial implications for provider. This study was designed to determine which appointment reminder methods participants prefer and assess how likely they are to respond to messages about upcoming appointments with different reminders. A convenience sample of one hundred subjects was recruited for this study. A self-administered, confidential survey was given to patients aged 18 and older and to parents/guardians of children seeking treatment at a pediatric endocrinology clinic in Buffalo, NY. A cross-sectional design was used and participants ranked different appointment reminder systems and indicated their usage of technology. Their responsiveness to appointment reminders was assessed. It is important to determine preferences because there is no one-size-fits-all solution to no-shows.
IMPROVING THE FAILURE-TO-ATTEND OCCURRENCES IN AN INNER-CITY FAMILY MEDICAL PRACTICE: UTILIZING SMS TEXT MESSAGING AS A PATIENT REMINDER SYSTEM

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Background: Patient no-show or missed appointments are one of the most costly and serious operational concerns affecting virtually all medical practices due to its comprehensive effect on the patient, the practice and the community as a whole. The effects of missed appointments include but are not limited to the health risks to the patient, the health risk of a patient that was unable to book an appointment in the missed appointment time, poor use of staff time and loss of revenue.

Objective: The general aim of this randomized controlled trial was to examine the utilization of short message service (SMS) text messaging as a reminder system. It was hypothesized that individuals in the SMS text message group would experience significantly fewer missed appointments than those in the currently used, landline phone messaging group.

Methods: A systematic randomized group of patients at the health center made up the sample. The sample size n= 366 was required with 80% power and a 5% (2-sided) significance level. Due to concerns related to subjects lost to follow up, an oversampling of 10% was performed, resulting in a final sample size of 402.

Results: The intervention group demonstrated a 16.9% no show rate while the control group demonstrated a 28.4% no show rate (ρ = .002) validating the aforementioned hypothesis.

Conclusion: Overall, this study revealed a significant association between the use of SMS text message as a patient reminder system and the missed appointment rate.
TO WEAR OR NOT TO WEAR: MASK USE IN PEDIATRIC ONCOLOGY PATIENTS

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Pediatric oncology patients have a higher risk for infection secondary to neutropenia, malnutrition, presence of central venous catheters, and invasive procedures (Friese, 2007). Prevention of infection is top priority and universal use of evidence-based preventive and management strategies for patients can optimize their outcomes (Shelton, 2003). Evidence suggests that health care associated infections primarily result from noncompliance with infection control practices (Centers for Disease Control, 1994; Martel et al., 2013), and hand hygiene is the most important infection prevention measure (O’Malley, 2009). Informal benchmarking discussions with staff at institutions across the country and at a town hall meeting during the 2012 APHON conference revealed common yet variable use of surgical masks, due to inconsistent implementation and variable patient compliance, to reduce infection risk in pediatric oncology patients. The Iowa Model of Evidence-Based Practice to Promote Quality Care (Titler, et al., 2001) provided the framework to determine if neutropenic, pediatric oncology patients who wear surgical masks are at decreased risk of acquiring infections compared to neutropenic, pediatric oncology patients who do not wear surgical masks. A literature review was completed; additional evidence from benchmarking and professional forums was evaluated. Most literature regarding mask use is limited and reveals no conclusive evidence related to preventing transmission of influenza-like disease between exposed individuals (Aledort, et al., 2007; Condon & Sinha, 2010; Cowling, et al., 2010; IOM, 2006). Healthcare facilities commonly recommend use of disposable, surgical masks for particle inhalation prevention for high-risk populations, yet no clinical benefit has been demonstrated (Maschmeyer, 2009).

Recommendations for mask use in neutropenic, pediatric oncology patients were made and implemented using evidence-based strategies (Cullen & Adams, 2012). Pre- and post-implementation evaluations include staff knowledge, perceptions, and practice behaviors (Bick & Graham, 2010; Parry, et al., 2013) along with patient and family feedback.
Our laboratory is studying a novel class of lipophilic antibacterial, anti-inflammatory salicylanilides as potential topical treatment options for dermal and oral inflammatory conditions caused or exacerbated by bacterial infections such as gingivitis, acne and decubitus ulcers. Besides possessing potent antibacterial and anti-inflammatory activities (via distinct mechanisms of action), these compounds are also unique in that they have good safety margins presumably due to their physical (lipophilic) and chemical (lack of halogen substitution directly on the aromatic ring system) properties. In the course of our studies we have discovered that many of these agents also have potent activity against the growth of mammalian tumor cells in vitro. We have now expanded this work to include structure-activity relationship (SAR) studies of the antiproliferative activity of our salicylanilide library using the human breast cancer cell line MDA-MB-231. MDA-MD-231 cells belong to a subtype of breast cancer tumors that do not express estrogen, progesterone or HER-2/Neu receptors (the triple negative phenotype), which are targets for many current therapies. Thus, activity against these cells may provide unique therapeutic targets against breast cancer. Our current results suggest the antiproliferative activity of these compounds against MDA-MB-231 cells is structure-dependent which may be indicative of site-specificity. Future experiments will attempt to identify the molecular target for these compounds to design more efficacious anticancer drug candidates.
Purpose: This study explored the feasibility and acceptability of a peer navigation (PN) survivorship program for African American (AA) breast cancer survivors (BCS) and its effects on selected short-term outcomes according to the Quality of Life Model Applied to Cancer Survivors.

Background: As the number of cancer survivors in the U.S. grows, it becomes increasingly more necessary to address the needs of this population. AA BCS continue to report decreased access to services, information, and follow-up care post cancer treatment.

Methods: An AA breast cancer survivor who completed treatment over one year prior to the study was trained as a PN, and then paired with AA women completing primary breast cancer treatment (n=4) for 2 months. This mixed methods, proof of concept study utilized a convergent parallel approach to explore feasibility and investigate whether changes in scores are favorable using interviews and self-administered questionnaires.

Results: Results indicate that the PN intervention was acceptable by both PN and BCS, and was feasible in outcomes of recruitment, cost, and time requirements. Improvements in symptom distress, perceived support from God, and preparedness for recovery outcomes were observed over time. Qualitative analysis revealed six themes: Learning to Ask the Right Questions, Start Living Life Again, Shifting My Perspective, Wanting to Give Back, Home Visits are Powerful, and ‘We Both Have a Journey’: Support from Someone Who Has Been There.

Conclusions and Implications: Results support current literature indicating that AA women who have survived breast cancer can be an important source of support, knowledge, and motivation for those completing treatment. Areas for future research include standardization of training, and larger, randomized trials of intervention. Survivors experience a loss of safety net after treatment for breast cancer, and persistent support needs, and can benefit from culturally tailored support and services. With further testing, this PN intervention may aid in decreasing general symptom distress and increase readiness for recovery post treatment.
Objective: The purpose of this study was to evaluate how the timing of classroom reviews impacts student performance.

Methods: Material taught in a graduate radiology class was divided into four groups: three in which material was reviewed at various times throughout the course and a control group in which material was not reviewed. Students were re-examined six weeks after the initial examination, to evaluate for long-term retention. Paired t-tests of means were performed to evaluate for significant differences between the review and control groups. Students also completed a survey regarding their preferences for various review methods.

Results: Reviews had the greatest impact on students’ performance regarding more difficult material. Though any review method resulted in an improvement of student performance in this area, the greatest improvement was achieved when material was reviewed throughout the course (43% improvement and 53% greater long-term knowledge retention).

Conclusion: Any form of reviewing material in the classroom produced improved student performance and was deemed helpful by the students. Reviewing material throughout the course resulted in both improved examination performance and long-term retention. The students expressed that the most helpful methods of review were laboratory activities and comparison slides.
In the United States there are pockets of mobile home communities throughout what is considered “suburbia” experiencing segregation and concentrated poverty which strongly mimics that observed within the urban ghettos (Fothergill & Peek, 2004). They are a socially stigmatized population for which whole negative stereotypes have been created and perpetuated (Harry, 2004; Kusenbach, 2009). These suburban mobile home residents experience higher rates of poverty, lower levels of education (MacTavish, 2007), and are geographically separated from services to which the urban poor, ironically, are often close in proximity. All of these factors have been long understood to negatively influence health (Marmot & Wilkinson, 2005) and need to be investigated.

The objective in this project is to determine how being a suburban mobile home resident impacts both physical and mental health. The specific aims proposed are as follows: (1) evaluate the most common morbidities and mental health issues in suburban mobile home communities; (2) compare them to national averages, as well as urban and rural health experiences; (3) identify potential social and cultural influences; (4) evaluate access to care; (5) and evaluate potential barriers to good health (physical, geographical, social). The central hypothesis is that suburban mobile home residents are experiencing health disparities. These disparities may be influenced by socio-economic components and negative health behaviors related to the cultural norms of the population.

The positive impact of this research would be an understanding of the overall health; potential health disparities; and the influences of these disparities in the suburban mobile home community population for the first time ever. Decades of findings on the social determinants of health suggest that this population is disenfranchised and therefore much more likely to experience health inequities. A long-term goal would be the development of very specific and tailored outreach efforts that would be capable of reducing or eliminating health disparities in the population. Such successful efforts can only be constructed once the causes of health disparities are understood.
Li-ion battery technology began in the early 1970’s. Researchers found that alkali ions (lithium and sodium) could be electrochemically shuttled between the cathode and anode sides of a battery along with an electron. Rapid progress lead to commercialization in the 1990’s and the Li-ion battery has become ubiquitous in our lives powering much of our electronics. However, the energy demands for future devices and transportation vehicles will exceed the energy capacities and power of current Li-ion batteries. Include in these issues the economic and environmental costs of the materials for the batteries and it becomes a worldwide challenge to find alternative methods to meet the benchmarks. A number of approaches in this research aim to lower the toxicity/cost of materials by the increased use of environmentally friendly chemicals at the cathode, synthesize nanoscale morphological materials to decrease mass transport kinetics and increase power density, and investigate surface-specific modifications and prevent deleterious side effects that could maximize the capacity and longevity of present technologies. The research also seeks to answer some fundamental questions regarding the capacity fade and the dangerous catastrophic failures seen in some Li-ion battery configurations.
ANKYLOSING SPONDYLITIS MIMICKING SPASMODIC TORTICOLLIS-
A CASE REPORT

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Background: Recent research has shown that early diagnosis of Ankylosing Spondylitis (AS) leads to increased treatment effectiveness.

Objective: The purpose of this study is to introduce a case report of a patient that presented into a chiropractic office with an atypical presentation of AS with spasmodic torticollis (cervical dystonia).

Methods: A 26-year-old male presented to a private chiropractic practice with complaints of neck stiffness with decreased cervical range of motion. Based on clinical exam, negative imaging, and negative HLA B-27, the initial diagnosis was spasmodic torticollis.

Results: Short-term improvements to manipulation, deep tissue massage, PNF, EMG guided Botox injections were documented. MRI imaging 12 and 24 months later revealed sacroiliitis with erosions of the pelvis and thickening of the mid and upper cervical anterior longitudinal ligament, confirming the diagnosis of AS. A trial of Remicade was initiated.

Discussion: AS remains difficult to diagnose in early stages of the disease. Current diagnostic criteria for AS continues to place an emphasis on the lower back with little emphasis on the cervical spine.

Conclusion: Further research on expanding the criteria for diagnosis of atypical cases of AS may lead to earlier diagnosis and treatment.
EFFECT OF CLINICAL PHARMACIST MONITORING AND INTERVENTION IN PATIENTS RECEIVING INTRAVENOUS HEPARIN

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Objectives: To determine the impact pharmacist monitoring and intervention has had on safety and efficacy outcomes of IV UFH in patients at a large teaching hospital.

Methods: This retrospective, observational study will compare measurable degrees of adherence to the hospital heparin protocol before clinical pharmacist involvement in intravenous heparin monitoring and after involvement. The primary endpoints include selection of appropriate initial infusion rate, timing of initial anti-Xa levels within six hours of initiation of infusion, timing of anti-Xa levels within sixty minutes of anticipated due time, acknowledgement of anti-Xa levels within 120 minutes of laboratory result, appropriate adjustment of infusion rates, and completion of required documentation as stipulated by the institution’s heparin protocol. Secondary endpoints include assessment of cultural/religious contraindications to heparin, and proper notification of physicians regarding any subtherapeutic infusion rates after three anti-Xa levels. The data collection for the retrospective study will take place over the course of six months from January 2015 to June 2015.

Included data must meet the following criteria:
- Lab draws obtained from a patient with inpatient status
  - Between December 2013 and January 2014 for the pre-intervention period
  - Between August 2014 and September 2014 for the post-intervention period
- Lab draws obtained from a patient who received heparin infusion for at least 24 hours

Excluded data will consist of:
- Subcutaneous heparin administration
- Data from patients who received IV UFH for less than 24 hours
- Patients with two or less documented data points
- Data from patients in the post-intervention phase without pharmacist documentation
- Data points with duplicate documentation
- Data points collected during the night shift when pharmacist coverage is inadequate to ensure proper interventions occurred (10PM-6AM)
COORDINATION BARRIERS TO LONG-TERM SERVICES AND SUPPORTS

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Medicaid-funded Long-Term Services and Supports (LTSS) include a range of healthcare delivery services provided for eligible Medicaid recipients in need of ongoing care. As of 2013, four million people in the United States received Medicaid-funded LTSS. These services are provided either in the community or in a facility at a cost of nearly 150 billion dollars a year. Because it is more expensive to provide care in a facility than in the community as well as the long-standing negative stigma of institutional care, many states have moved to community-based LTSS. The purpose of this study was to identify the barriers to maintaining community-based LTSS for Medicaid members in New York State. The significance of this study is to emphasize the barrier management efforts of care coordinators to keep LTSS in place. Data collection occurred between February and March of 2015 by means of key informant interviews with 17 care coordinators from six community agencies and two managed care organizations in Erie and Niagara County. Key informants were selected based on their care coordination experience and involvement with the Medicaid-funded LTSS population. A semi-structured questionnaire for the interviews were constructed based upon the researcher’s own experience with care coordination. A content analysis was conducted to categorize responses according to key informants’ experience with care coordination barriers and to compare the hypothesized barriers to key informant responses. The findings identify challenges with maintaining community-based LTSS in New York State and establish a foundation to advocate for barrier management strategies as the LTSS population move to mandated managed care.
Quantum dots (QDs) are nanometer-sized inorganic crystals. They have many uses that take advantage of their size-dependent optical properties. These include, QDs as light absorbers for QD-sensitized solar cells, fluorescent probes for biological imaging, or for inorganic light emitting diodes. We believe we have synthesized water-soluble cysteinate-capped CdSe, ZnSe, and Zn\textsubscript{x}Cd\textsubscript{1−x}Se quantum dots. By varying the reaction conditions, including ratio of concentrations of the precursors, temperature of reaction, and time of reaction, we have successfully synthesized QDs of varied size and optical properties. Under near identical reaction conditions, a greater ratio of Cd to Zn results in red-shifted absorption bands for the resulting quantum dots. This may confirm the presence of alloyed Zn\textsubscript{x}Cd\textsubscript{1−x}Se QDs due to the larger band gap of ZnSe compared to CdSe. We have synthesized both “magic-sized” QDs, with a narrow absorption band, indicative of a small distribution of sizes, and more traditional QDs, with a broader absorption band. The absorbance band maxima vary from 380 to 500 nm. Emission from CdSe QDs was broad and red-shifted from the absorbance spectra revealing the emission is from trap-states. A myriad of collaborations and future directions are underway with the synthesized QDs.
Compounding is an integral component of the profession of pharmacy that provides individualized drug therapy to patients. However, in recent years, there is a growing concern about the quality of compounded preparations as compared to manufactured drug products. This study longitudinally assesses the development and retention of compounding skills among D’Youville student pharmacists by evaluating them at three different points in the PharmD curriculum; one semester before, the semester during and one semester after they formally learn pharmacy compounding skills in their P2 year through the laboratory-based Integrated Compounding and Practice course. During each session, students were given a prescription to compound acetaminophen capsules from commercially available tablets. The students had to perform the calculations, compound the capsules and write down the procedure on their own. Their products were then physically and chemically analyzed (by HPLC) in the laboratory in accordance with established quality control tests which included uniformity of weight, assay and appearance. The results of this study indicate that as expected, the students’ products showed the greatest variation in weight, assay and appearance during their first attempt. The quality control tests indicated a significant improvement in their compounded products during their second attempt. However, during the third attempt, it was evident that the students did not adequately retain their competency in compounding skills and knowledge. These results indicate that while pharmacy students readily develop compounding skills in laboratory coursework, retention of these skills is not adequate. It remains to be seen if integrating compounding throughout the pharmacy curriculum would better help in ensuring retention of these skills.
At its height, the Neo-Assyrian Empire was the largest polity the world had yet seen, uniting and administering disparate peoples and cultures across much of the Middle East over the course of almost three hundred years (ca. 900-600 BC). Due to its size, longevity, and administrative innovations, as well as the great volume of epigraphic and archaeological evidence recovered, research on the Neo-Assyrian Empire has a great potential to contribute to the cross-cultural study of the imperial political form and its motives, methods, and consequences. However, many past reflections on Neo-Assyrian imperialism have suffered from a core-centric perspective and assumed a passive periphery, due in part to an early research focus on the major cities of the Assyrian heartland. The control that the Neo-Assyrian Empire exerted over subject lands has largely been conceived of in terms that present the empire as the main actor in relations between the core and periphery. More recently, new work on the empire's peripheries has encouraged archaeologists and historians to consider more dynamic models for understanding Neo-Assyrian power and the ways in which subject lands received it. Such approaches bring to the foreground the reality that the development and lifecycles of empires in general and the Neo-Assyrian Empire in particular cannot be completely explained by the activities of the core. They have also led to more nuanced analyses of the histories and archaeologies of lands subject to Assyrian power. Capitalizing on these trends in analysis—and on the growing body of literature dealing with Old and New World empires—the contributions to the book I am co-editing (with Virginia Rimmer Herrmann, Universität Tübingen) underscore the variability of both imperial strategies and local responses to Assyrian power across time and space. This poster provides an overview of the strategies that the Neo-Assyrian Empire applied to manage a massive and diverse empire. Likewise, it underscores the diverse ways in reception of those strategies on the part of subjects closer to the Assyrian heartland and those far away from it. As a whole, they demonstrate the destructive and constructive role of empire as well as some of the unintended effects of imperialism on socioeconomic and cultural change.
This mixed qualitative and quantitative study measured immediate and long term retention of knowledge about Pediatric Acute-Onset Neuropsychiatric Syndrome (PANS) and use of information in practice by health and education professionals.

**Methods:** As per standard continuing education (CE) procedures, participants completed a pre-test \(n=120\), an identical immediate post-test \(n=120\), and an identical 3-week on-line follow-up test \(n=37\).

**Analysis:** Paired samples t-test for pre-test to post-test scores and repeated measures ANOVA for pre-test to post-test to follow up scores were used for analysis with significance set at .05. For qualitative analysis, the most/least beneficial aspects of the seminar were coded for themes as were comments regarding application of information to practice.

**Results:** Results of the study revealed increase in knowledge from pre-test to post-test was statistically significant \((p < .000)\) as was pre-test to follow-up \((p < .000)\), though significant decline from post-test to follow-up \((p < .000)\) was seen. Qualitative themes revealed that participants found information about strategies in working with children with PANS to be most beneficial and found detailed biology to be least beneficial. On follow-up, participants reported they shared information with colleagues and used information when evaluating children.

**Conclusions:** The CE seminar was effective in improving professionals’ immediate awareness and knowledge of PANS. Significant retention occurred after three weeks, but this was significantly lower than immediate post-seminar recall. Strategies to maximize post-seminar knowledge retention are discussed.
Melanoma cells typically have high levels of superoxide anion which may increase their susceptibility to cell death by reactive oxygen species (ROS). We have used this information to establish a system whereby melanoma cells are saturated with ROS through treatment with non-thermal plasma (NTP). NTP is formed from a mixture of highly charged helium and atmospheric gases to emit a total of 45 molecular species, many of which are ROS. We have recently demonstrated that NTP causes selective apoptotic cell death of melanoma cells as compared to normal skin keratinocytes when plated in co-culture. Since tumors flourish under low oxygen (hypoxic) conditions, we tested the effects of NTP under hypoxia. In order to enhance the effects of NTP, we combined this therapy with the experimental anticancer drug, tirapazamine, which promotes cell toxicity through DNA damage only under hypoxic conditions. The question then remains as to how to increase the target area of NTP treatment for melanoma therapy. Our previous studies have demonstrated that gap junctions act via the bystander effect to enable the passage of cell-death promoting signals by NTP. We have shown that overexpression of gap junctions through transfection with connexin 43 (Cx43) increased the spreading of cell death induced by the combination therapy with NTP and tirapazamine and the target area of the NTP torch. We have also demonstrated that expression of Cx43 with NTP and tirapazamine causes a significant decrease in HIF1α transcript expression of several metastasis-promoting genes. We are currently testing this therapeutic approach in melanoma tumors induced in severe combined immunodeficient (SCID) mice injected with melanoma tumor cells expressing Cx43. We are delivering weekly intraperitoneal injections of tirapazamine followed by NTP treatments and tumor measurements every second day. These studies may lead to a future clinical approach to melanoma therapy through selective ROS induction and modification of gap junction phenotype.