

Annual Meeting Abstracts

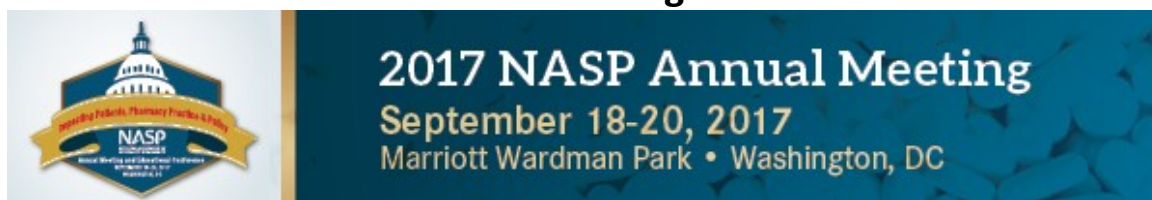


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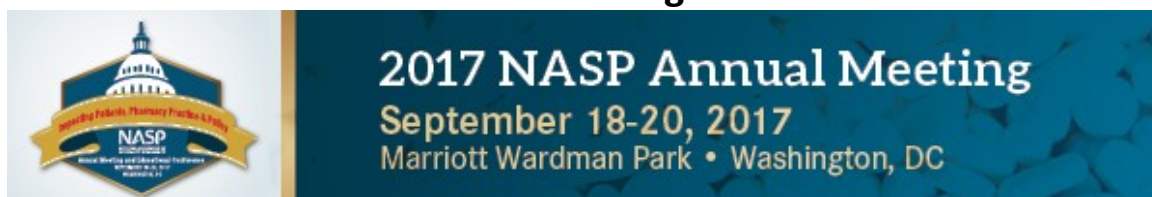
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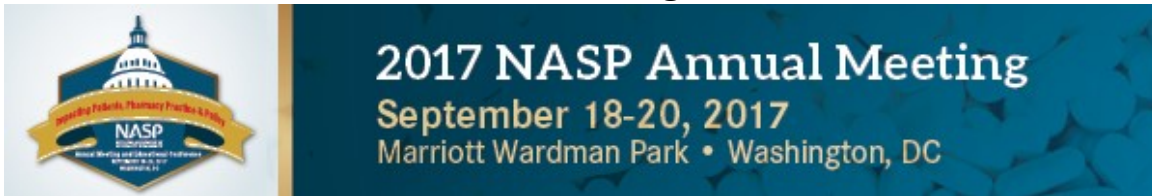
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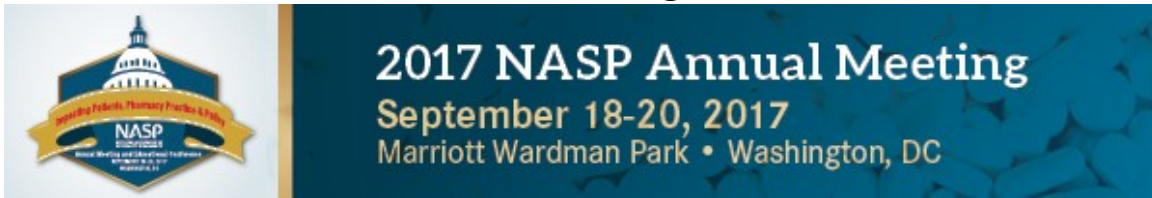
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[Poster #1: The Number Needed to Treat to Achieve One Additional Patient with Metastatic Castration-Resistant Prostate Cancer Free of Clinical Event: Comparison of Enzalutamide and Bicalutamide in the TERRAIN trial - Shore ND, Chowdhury S, Yang H, Schultz NM, Brown BA, Flanders SC.](#)

Background: Enzalutamide (ENZ), a second-generation androgen receptor inhibitor, is approved for use in metastatic castration-resistant prostate cancer (mCRPC) and has shown significant survival benefits over placebo in two phase 3 trials. Bicalutamide (BIC), a first-generation androgen receptor inhibitor, is used in clinical practice for the treatment of mCRPC. In the phase 2 TERRAIN trial (NCT01288911), a head-to-head comparison of ENZ with BIC, ENZ demonstrated superiority over BIC in progression-free survival (PFS) [ie free of progression or all-cause death], radiographic PFS (rPFS), and freedom from prostate-specific antigen (PSA) progression.

Objectives: To estimate the number needed to treat (NNT), comparing ENZ with BIC, to achieve 1 additional mCRPC patient with PFS or rPFS, or freedom from PSA progression at 1 year and 2 years.

Methods: The 1-year and 2-year rates of PFS, rPFS, and freedom from PSA progression in ENZ-treated and BIC-treated mCRPC patients were obtained from the TERRAIN trial results. The NNT was calculated as the reciprocal of the event-rate difference between ENZ and BIC at 1 year or 2 years. The NNT value indicates the number of patients that need to be treated to achieve 1 additional patient in PFS, rPFS, or freedom from PSA progression comparing ENZ with BIC, with a lower value indicating a greater clinical benefit. The 95% confidence interval (CI) of the NNT was derived based on 95% CI of the event-rate difference.

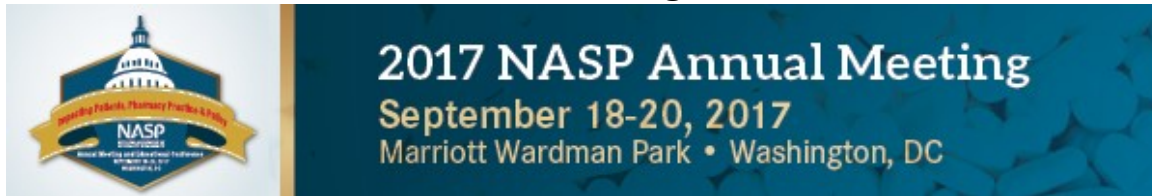
Results: The NNT to achieve 1 additional patient with a PFS outcome, comparing ENZ with BIC at 1 year and 2 years, were 4.3 (95% CI, 2.9, 8.0) and 3.7 (95% CI, 2.6, 6.7), respectively. This indicates that treating 4.3 patients with ENZ vs. BIC, would result in 1 additional patient free of progression or death at the end of 1 year; on average, treating 3.7 patients with ENZ vs. BIC, would result in 1 additional patient free of progression or death at the end of 2 years. With respect to rPFS, the 1-year and 2-year NNT comparing ENZ with BIC were 10.0 (95% CI 4.4, not reported) and 2.8 (95% CI, 1.9, 5.5), respectively. The 1-year and 2-year NNT comparing ENZ with BIC to achieve 1 additional patient with freedom from PSA progression were 2.1 (95% CI, 1.7, 2.9) and 3.2 (95% CI, 2.2, 5.9), respectively. **Conclusions:** The use of ENZ vs. BIC in men with mCRPC leads to more patients with improved clinical outcomes (PFS, rPFS, and freedom from PSA progression). These NNT results should be considered during the management of mCRPC.

Keywords: enzalutamide, bicalutamide, metastatic castration-resistant prostate cancer, number needed to treat

Sponsorship: Yes, This study was sponsored by Astellas Pharma, Inc., and Medivation, Inc., which was acquired by Pfizer, Inc. in September 2016, the co-developers of enzalutamide.

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[Poster #2: Collaboration and Data Reporting for Hemophilia Specialty Pharmacy Management: Metric Development for Quality Improvement. - Pindolia V, Rice M, Koulianos K.](#)

Background: Hemophilia represents a significant driver of healthcare resource utilization and requires expert hematologic and multidisciplinary services to achieve optimal outcomes. Despite serving as federally-recognized centers of excellence in managing this unique patient population for more than 40 years, hemophilia treatment center (HTC) collaboration with specialty pharmacy providers (SPPs) and payers is currently lacking. This is largely due to a lack of communication and information shared between stakeholders.

Objectives: Routine information sharing between HTC/SPP and payer stakeholders is paramount to improving outcomes in hemophilia; the Comprehensive Care Sustainability Collaborative (CCSC) initiative provides a unique forum for such dialogue and data exchange. The CCSC set forth to develop a set of quality improvement and cost management metrics. These metrics will be used in a first-of-its-kind series of pilot programs that are anticipated to forge innovative collaboration between payers and HTCs/SPPs.

Methods: The National Hemophilia Foundation (NHF), in conjunction with Impact Education, LLC, developed the CCSC: an initiative among 18 leading clinicians and managed care decision-makers. Over the course of consensus meetings, CCSC developed metrics for quality improvement pilot programs that can be replicated across the United States between payers and HTCs/SPPs to facilitate cost-effective hemophilia management integrating the HTC comprehensive care model.

Results: The following metrics are being reported by HTCs/SPPs and payers via a series of pilot programs (reporting group indicated in parentheses): patient classification by diagnosis (HTC/SPP); total cost of clotting factor (payer); prescribed factor dose/dispensed dose/weight [\pm range] (payer and HTC/SPP); emergency department [ED] visits/hospitalizations (payer and HTC/SPP); home infusion of clotting factor [%] (HTC/SPP); total cost per patient (payer); patient contacts [clinic visits, follow-ups, telemedicine, e-mail, etc] (HTC/SPP).

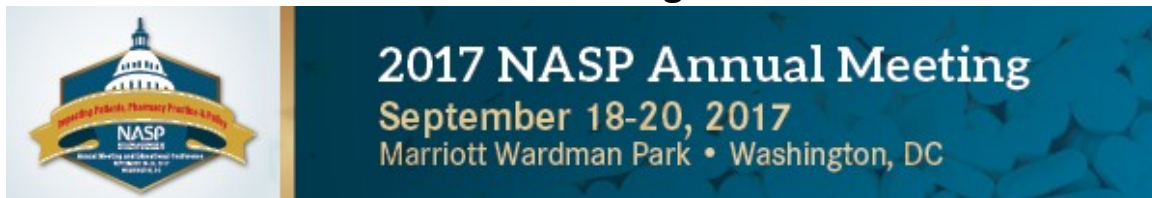
Conclusions: Pilot programs founded on the metrics developed by the CCSC will serve as the foundation for future collaboration between payers and HTCs/SPPs. Data collection and reporting demonstrates quality in specialty pharmacy management by HTCs and SPPs and enhances sustainability in the relationships of these entities with payers. Such quality improvement and cost management initiatives are crucial in the new era of health care accountability.

Keywords: hemophilia, factor, specialty pharmacy, HTCs, comprehensive care

Sponsorship: Yes, Supported by charitable donations from Bayer HealthCare Pharmaceuticals, Inc., Bioverativ, Genentech, Inc., and Shire.

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[Poster #3: Treatment Patterns and Costs Associated With Anaplastic Lymphoma Kinase-Positive Non–Small Cell Lung Cancer Patients Receiving Ceritinib: Analysis of Administrative Claims Data. - Dalal A, Dea K, Guerin A, Culver K.](#)

Background: Ceritinib is the first FDA-approved second-generation anaplastic lymphoma kinase (ALK) inhibitor to treat patients (pts) with ALK-positive non–small cell lung cancer (NSCLC) who progressed on or were intolerant to crizotinib. Given its recent approval, there is a lack of evidence on real-world ceritinib use and healthcare costs.

Objectives: To describe characteristics, treatment patterns, sequencing, and health care costs of patients(pts) receiving ceritinib.

Methods: Lung cancer adult pts receiving ceritinib were identified from 2 large US administrative claims databases (2006-2015). Pts with continuous health plan coverage ≥ 6 months (mo) before (baseline period) and ≥ 1 mo after ceritinib initiation (index date) were included. Pts characteristics were assessed during baseline period. Time from first lung cancer diagnosis and from crizotinib initiation and discontinuation to index date, proportion of pts receiving therapies between crizotinib and ceritinib, and ceritinib dose were summarized. The 6-mo ceritinib dose decrease rate and median time to discontinuation were analyzed using Kaplan-Meier analyses. Health care costs were measured from index date to ceritinib discontinuation, or end of data and were reported per-patient-per-month (pppm).

Results: A total of 164 pts receiving ceritinib were identified (mean age 54.2 years, 57.3% female) and were observed for an average of 7.4 mo (interquartile range, 3.2-11.3) post index date. Pta had a high comorbid burden (mean Charlson Comorbidity Index = 7.6) and 94.5% had metastases (respiratory system 62.8%, brain 59.1% lymph nodes, 50.0% bone 47.0%, and liver 28.7%). Ceritinib was initiated on average 19 mo after lung cancer diagnosis. Among 91.5% of crizotinib pretreated pts, pts initiated ceritinib on average 12 mo after crizotinib initiation and 2.1 mo after discontinuation (median 0 mo). 23.8% of pts received a treatment between crizotinib and ceritinib (chemotherapy 17.7%; radiotherapy 9.8%). Average dose on ceritinib was 695 mg; the 6-mo dose reduction rate was 12.7%. Among the 61 (37.2%) pts who discontinued ceritinib, 24 received chemo- or targeted therapy; the others did not receive antineoplastic therapy. Median time to discontinuation was 8.6 mo. While on ceritinib, average total cost ppm was \$20,414; \$12,834 in pharmacy, \$3233 in inpatient, and \$3893 in outpatient costs.

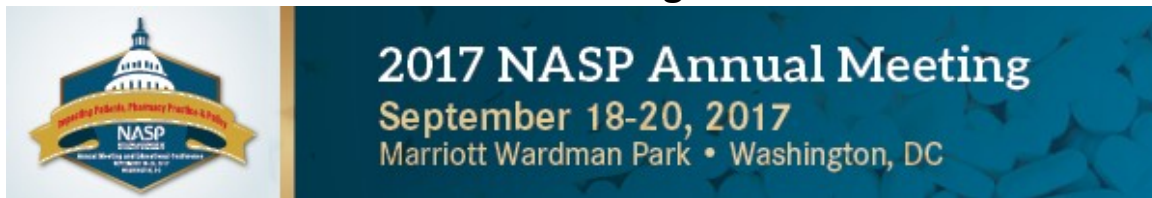
Conclusions: Pts with ALK-positive NSCLC receiving ceritinib had a high comorbid burden and started ceritinib quickly after crizotinib on the recommended dose. Medical service costs accounted for more than one-third of the total health care costs.

Keywords: ALK, Ceritinib, NSCLC

Sponsorship: Yes, This study (LDK 2016-02) was sponsored by Novartis Pharmaceuticals Corporation

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[Poster #4: Economic Analysis of Molecular Mutation Testing in Real-World Practice Using Claims Data: Costs of Single Gene vs. Panel Tests in Patients With Lung Cancer. - Dalal A, Dea K, Guerin A, Culver K.](#)

Background: In lung cancer, BRAF mutation, as well as other driver mutations, can be detected by single gene tests (eg, reverse transcription polymerase chain reaction [RT-PCR]) and panel tests (eg, next-generation sequencing [NGS]). No information exists in the literature on the costs of genetic testing from a payer perspective for patients (pts) with BRAF mutated lung cancer.

Objectives: To assess time to BRAF testing, compare characteristics between pts tested vs. not tested for BRAF mutation, and describe amount reimbursed for BRAF tests, as well as the total cost for BRAF testing following a sequential vs. an NGS approach.

Methods: Pts with lung cancer diagnosed after January 1, 2013, were identified from 2 US administrative claims databases. Pt characteristics were assessed during the 12 months (mo) preceding the first lung cancer diagnosis (index date). Molecular tests were analyzed from index date to end of continuous health plan enrollment or end of data availability (December 2015), whichever occurred first, based on combinations of CPT procedure codes recorded within 7 days. Time to BRAF mutation test was assessed using Kaplan-Meier analysis. Costs were analyzed from a payer's perspective; thus, claims with no amount reimbursed (\$0) were excluded.

Results: A total of 28,011 pts newly diagnosed with lung cancer were identified. Among them, 1260 (4.5%) were tested for BRAF; at 6 and 12 mo following index date, 3.2%, and 4.2% were tested. Compared to nontested pts, tested pts were younger (58.3 vs. 65.3 years old; $P < .001$), had a lower Charlson Comorbidity Index (2.8 vs. 2.9; $P = .005$), and a higher proportion had metastases (70.9% vs. 43.4%; $P < .001$). In 76.0% of the cases, BRAF was tested along with KRAS mutation. Other procedure codes commonly billed with BRAF mutation included microdissection and molecular pathology procedure (level 5). BRAF was tested using NGS test in 6.6% of cases. Depending on the combination of procedure codes, average reimbursed amounts for the 10 most common combinations ranged from \$207 to \$2074. When considering costs for each test individually, sequential testing that comprised KRAS, EGFR, ALK, ROS1, and BRAF mutation tests was estimated at \$3763 (\$464, \$696, \$1070, \$1127, and \$406, respectively) while NGS testing was estimated at \$2860.

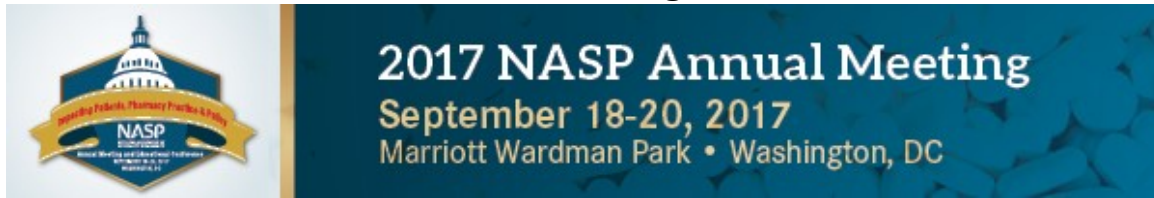
Conclusions: Amounts reimbursed for BRAF mutation tests highly vary based on the combination of procedures. Findings suggest that NGS testing is associated with cost savings compared with sequential testing of individual mutations.

Keywords: BRAF, Lung, NGS

Sponsorship: Yes, This study was sponsored by Novartis Pharmaceuticals Corporation

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Poster #5: Parkinson's Disease Is Not Only a Disease of the Elderly: A National Perspective. - [Mithal A, Bharathi L, Gurkirpal S.](#)

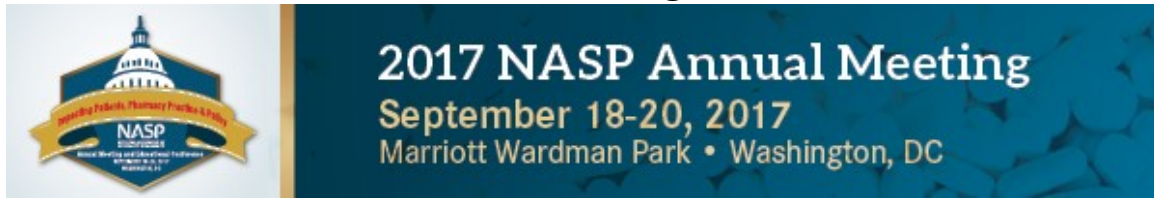
Background: Parkinson's disease (PD) is often considered a disease of the elderly, yet clinicians report a significant number of patients under 65 years of age diagnosed with PD in clinical practice. We examined the consequences of PD in patients <65 years in the United States. **Objectives:** To study hospitalizations in patients < 65 years of age with PD in the United States. **Methods:** We examined the prevalence of hospitalizations in patients <65 years of age with diagnosis of PD (ICD9 code 332.0) in the US population in using 2014 the National Inpatient Sample (NIS) databases. NIS is a stratified random sample of all US community hospitals. It is the largest inpatient care database with information on all inpatient care regardless of insurance status. **Results:** There were 33,650 hospitalizations in patients < 65 years with diagnosis of PD. Of these, 20,210 hospitalizations were in men (60%). The length of hospitalization was 5.96 days (95% confidence limit, 5.76-6.17). The charges per hospitalization were \$50,678 (95% CI, 48,793-52,563) with total charges of 1.7 billion dollars. **Conclusions:** PD and its complications are not limited to the elderly. Patients younger than 65 years of age accounted for over \$1.7 billion in hospitalization expenses alone in 2014.

Keywords: PD, healthcare utilization, hospitalization

Sponsorship: Supported by a research grant from Acorda Therapeutics, Inc. to ICORE.

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Poster #6: Serious Complications of Parkinson's Disease: A National Perspective of Emergency Department Visits and Hospitalizations. - [Mithal A](#), Bharathi L, Gurkirpal S.

Background: Parkinson's disease (PD) is a progressive and disabling neurological disorder affecting approximately as many as 1 million Americans. There are few studies on serious complications and comorbidities of PD.

Objectives: To study emergency department (ED) visits and hospitalizations in patients with PD.

Methods: We examined the prevalence and characteristics of all ED visits and hospitalizations with diagnosis of PD (ICD9 code 332.0) in the US population using the 2014 Nationwide Emergency Department Sample (NEDS) and the National Inpatient Sample (NIS) databases. NEDS is a 20% stratified sample of US hospital-based EDs and is the largest all-payer ED database in the United States. NIS is a stratified random sample of all United States community hospitals. It is the largest inpatient care database with information on all inpatient care regardless of insurance status. Prevalence was calculated per 100,000 US population. United States population data was taken from US Census Bureau.

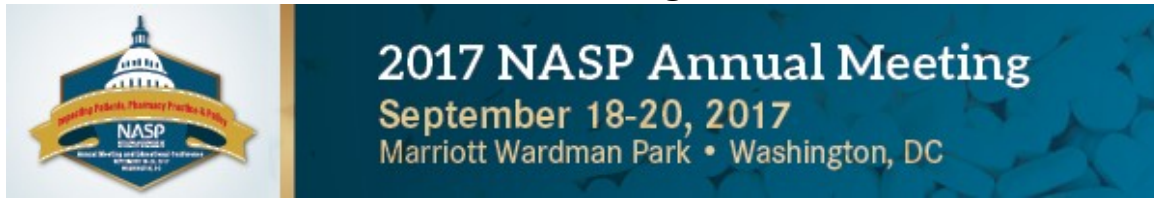
Results: In 2014, there were 137.8 million all-cause ED visits in the US, with prevalence of 43,219 visits per 100,000 population. Of this, PD accounted for 416,787 ED visits (131 visits/100,000 population). Men accounted for 55% of the ED visits (prevalence 193/100,000 vs. 148/100,000 in women). Medicare paid for 85% of these visits while Medicaid paid for 4% of these visits. Of the 272,450 hospitalizations in patients with PD, approximately 4.5% were directly related to a primary diagnosis of PD. Men accounted for 57% of hospitalizations (prevalence 129 /100,000 men older than 18 years vs. 94/100,000 in women older than 18 years). The average charges per hospitalization were \$47,006 with a mean length of stay of 3.8 days. Medicare paid for 87% of these hospitalizations. **Conclusions:** Patients with PD have significant serious comorbidities and complications requiring hospitalizations and ED visits. Only 4.5% of hospitalizations of PD are for management of primary PD, and most hospitalizations are due to comorbidity.

Keywords: PD, healthcare utilization, hospitalization

Sponsorship: Supported by a research grant from Acorda Therapeutics, Inc. to ICORE.

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[Poster #7: Management of Specialty Drugs, Specialty Pharmacies and Biosimilars in the United States. - Brook R, Smeeding J, McManama S.](#)

Background: Specialty medicines in 2016 were responsible for 42.9% of net spending and 39.6% of spending on an invoice-price basis. Biologics are a large portion of specialty spending and plans are expected to adjust their formularies to maximize biosimilar savings.

Objectives: A better understanding of management of specialty pharmacy (SP), SP-products and biosimilars.

Methods: Online survey of 459 US medical and pharmacy directors (MDs+PDs) on: adviser and plan information; specialty pharmacies and specialty pharmaceuticals, expected biosimilar coverage, restrictions, and copays and to compare current results with prior surveys.

Results: The survey was completed by 52 MDs+PDs (11.3%) and 55.8% were MDs and worked for: health plans/IDNs/PPOs/IPAs 57.7%; PBMs = 9.6%; government = 3.8%; the remainder were consultants. Plans were national (41.9%), regional (34.9%), or local (23.3%). Fifty-one percent restrict Specialty Providers (SPs). SPs were: PBM-owned (45.7%), owned by the health plan (34.8%), independent (17.4), hospital/IDN-owned (10.9%). The percentage of plans restricted SPs to those under contract was 65.9%; 6.8% only restricted SPs available through multiple SPs and 6.8% allowed any SP handling the agent. Specialty co-pays continue to move from fixed to percentages with more plans using group plus benefit design to determine the co-pay. Plans covered clinician administered products under the medical benefit (15.2% previously 64.3%), under the pharmacy benefit (67.4% previously 5.4%), the remainder based on price/plan design and 89.1% do not expect a change. Biosimilar use is expected for all reference product indications (59.5%), restricted to approved indications (31.0%). Plans expect biosimilar copays to be indication based (9.5%), discounted off the innovator (45.2%), to vary based on the approval timing (33.3%) or be the only product available (21.4%). Biosimilar education will be provided through: different copays (68.3%), prescriber and patient mailings (63.4% and 53.7%), prescriber and patient calls (39.0% and 19.5%). Expected biosimilars savings: 20% by 2025.

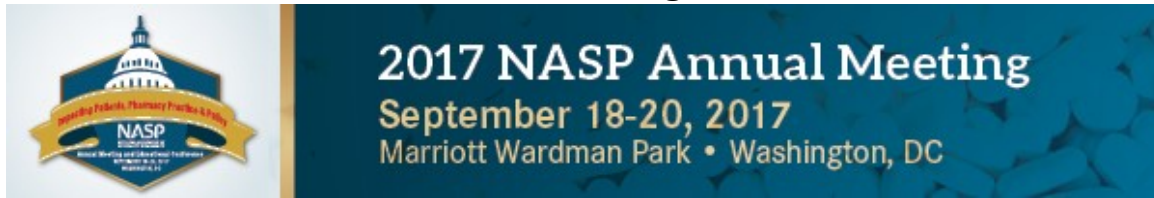
Conclusions: Costs associated with specialty pharmacies/pharmacy products have shifted from a fixed to percentage basis and are expected to grow. The switch from the medical to the pharmacy benefit for oral biologics and self injected agents represents a significant change as SP management has grown. Biosimilars are expected to provide some cost growth relief over time and to require patient and prescriber education.

Keywords: biosimilars; specialty pharmacy, formularies; copays

Sponsorship: Yes, TPG-National Payor Roundtable

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[Poster #8: Current Cholesterol Management in the United States and Changes from Prior Years. - Brook R, Smeeding J, McManama S.](#)

Background: Cholesterol is initially managed by dietary and lifestyle changes, followed by pharmaceutical therapies. Many agents that treat hypercholesterolemia are generically available. Targeted therapies with higher prices have recently entered the market.

Objectives: To understand how US health plans currently use their formularies to manage their members with hypercholesterolemia, hyperlipidemia, and high triglycerides and changes from prior surveys.

Methods: Managed care medical directors and pharmacy directors completed an online interactive survey. Topics included: adviser and plan information, co-pays and drug/treatment usage of different classes for cholesterol management (classifying as: Unrestricted, first tier, second tier, third tier, or requiring prior authorization [PA]).

Results: The survey was completed by 52 MDs+PDs (11.3% response rate): 55.8% were MDs and 57.7% worked for health plans/IDNs/PPOs/IPAs; 9.6% for PBMs; 3.8% for government; the remainder consultants. Plans were national (41.9%), regional (34.9%), or local (23.3%). Advisers/plans could cover multiple types of members: commercial (FFS = 54.2%; HMO/ PPO = 70.8%), Medicaid (traditional = 22.9%; HMO/PPO = 62.5%); Medicare (66.7%; traditional = 22.9%; PDP-only = 45.8%) and employer/self-funded lives (66.7%). Responses identified the highest PA rates were for proprotein convertase subtilisin/kexin type 9 (PSCK9s) inhibitors (alirocumab and evolocumab) were 92.7% (84.6% last year), lomitapide were 76.9% (71.1% last year). Unlike most other cholesterol agents, PSCK9s are injected, require self-administration training, and subject to a specialty co-pays. Triglyceride, fibrate and niacin products were unrestricted (35.9%, 32.5%, and 30.8%, respectively). Statins, with generic options that were mostly first tier, were 48.8%. Combination cholesterol-agents were 22.5% and cholesterol/cardiovascular combinations were 27.5% and were mostly in tier 2 (both previously ~20% higher in tier 2). While over the counter fish-oil products and supplements were generally unrestricted in Medicaid plans, not covered by commercial or Medicare plans; the prescription therapy icosapent was PA-restricted by 28.2% of plans (previously 17.3%). The most common tier 2 products included ezetimibe (35.9% previously 40.4%) and the bile-acid sequestrants (27.5% previously 32.7%).

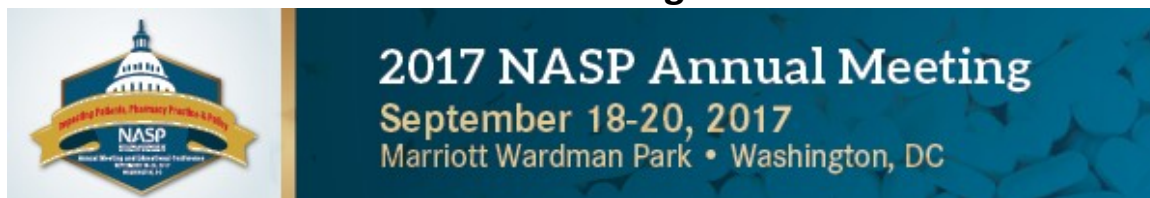
Conclusions: As new products enter the cholesterol management market, health plans will likely impose restrictions and plan designs on new classes favoring less expensive, generically available agents until real world effectiveness data becomes available.

Keywords: Cholesterol; Payor; Proprotein Convertase Subtilisin/Kexin type 9 (PSCK9s) inhibitors; Statins

Sponsorship: Yes, TPG-National Payor Roundtable

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Annual Meeting Abstracts



[Poster #9: Cancer Concerns and Oncology Care Management in the United States. - Brook R, McManama S, Smeeding J.](#)

Background: Cancer is costly, managed by a variety of treatments that include traditional and robotic surgery, radiation, chemotherapy, and immunotherapy. Pharmaceutical treatments are shifting from chemotherapy with limited effectiveness and multiple side-effects to effective targeted immunotherapies with fewer side-effects, multiple treatment pathways with indications alone and in combination, and receiving fast-track approvals.

Objectives: To determine the cancers most concerning to managed care plans, a survey invitation was sent to medical and pharmacy directors (MDs+PDs) of US health plans, insurers, and PBMs.

Methods: MDs+PDs completed an online interactive survey. Topics included: adviser+plan information, ranking (highest = 1 to 13 = lowest) of cancer types, co-pays, benefit-design, cancer management, and top concerns today and in 5 years from budgetary and medical points of view.

Results: The survey was completed by 52 MDs+PDs (11.3%): 55.8% were MDs and 57.7% worked for health plans/IDNs/PPOs/IPAs, 9.6% for PBMs, 3.8% for government, the remainder consultants. Plans were national (41.9%), regional (34.9%), or local (23.3%). Advisers/plans could cover multiple types of members: commercial (54.2% = FFS, 70.8% = HMO/PPO), Medicaid (traditional = 22.9%, HMO/PPO=62.5%), Medicare (66.7%, Traditional=22.9%, PDP-only = 45.8%) and Employer/Self-funded lives (66.7%). Oncology was tied for the top ranked specialty pharmacy condition covered (84.4% vs 64.3% last year). The most concerning average rankings (out of 13) was lung (2.54), breast (2.72), Colon+Rectal=3.64, Prostate=6.0, Myeloma=6.44, Leukemia=6.97, Melanoma=7.08, Pancreatic=7.72, non-Hodgkins lymphoma (7.82), kidney (8.85), endometrial (9.76), bladder (9.97), thyroid (11.38). When asked about cancer management, 48.7% of the plans/advisers sometimes leave oncologist alone, 65.0% of plans/advisers always follow NCCN guidelines, 56.4% sometimes follow other guidelines/pathways, and 38.5% sometimes follow internal protocols. Cancer/oncology was consistently reported the top concern from medical care (50% today, 42.5% in 5 years) and budgetary (35.7% today, 57.5% in 5 years) points of view.

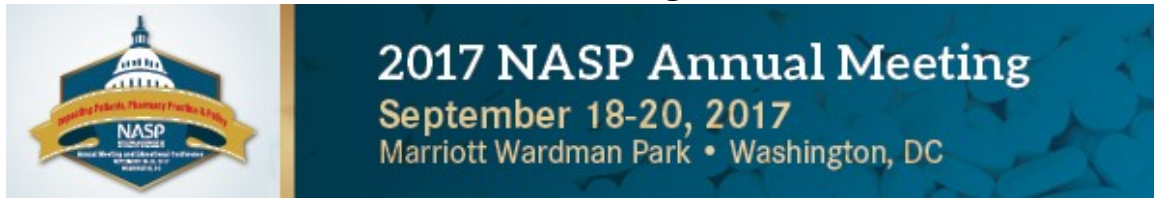
Conclusions: Cancer treatment is undergoing a series of changes. The shift from traditional chemotherapies toward targeted immunotherapies and the potential cost implications requires payor medical and pharmacy directors to focus on, adapt and evaluate newer agents and pathways rapidly as they become available.

Keywords: Cancer, Oncology, Specialty Pharmacy

Sponsorship: Yes, TPG-National Payor Roundtable

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Annual Meeting Abstracts



[Poster #10: A Systematic Literature Review of the Prior Authorization Process Challenges as Seen by Pharmacists - Cockerham A, Sheth J, Lin D, Vyas F, Toscani M.](#)

Background: Specialty pharmaceuticals more frequently need to overcome barriers for patient access. A significant barrier is a technique known as prior authorization (PA). Much is known about the PA challenges faced by patients, physicians, and payers. In the growing specialty market pharmacists are fulfilling a critical role as initiator, coordinator, and within the payer space, reviewer. With pharmacists becoming fully integrated into multiple channels of the PA process, a review of the challenges faced is warranted. The authors hypothesize that the challenges faced by pharmacists, due to their unique skill-set and positions, differ from those seen by other health care providers (HCPs).

Objectives: The objective is to summarize the challenges seen by pharmacists in multiple channels. This review is a preliminary analysis before a survey of pharmacists is conducted.

Methods: A systematic literature review was conducted through the MEDLINE database. Search terms included: prior authorization, step therapy, step edit, pharmacist, utilization management, cost containment, and patient access. Exclusion criteria included: lack of full-text, non-English or United States-based focus, emphasis on inpatient medication administration, articles greater than 20 years old, and a focus on nonpharmacist HCPs. Abstracts were collected and reviewed by a panel of four. Consensus to exclude was obtained by a three-fourths determination. A reference harvesting method was applied once to the citations in included publications, the same inclusion and exclusion methods were applied. Forty-one articles were included for descriptive analysis.

Results: Challenges faced by all HCPs included the multitude of PA formats, diverse payer processes, and variable timelines. PA challenges unique to pharmacists were dependent upon the practice site, ie hospital, specialty, or retail/chain pharmacy. Regardless of site, pharmacists are often assumed to be insurance experts without formal training on insurance billing and coding, frequently lack access to patients' full medical records, face uncompensated time spent on the PA, and encounter informational asymmetric exchanges with non-HCP payer agents.

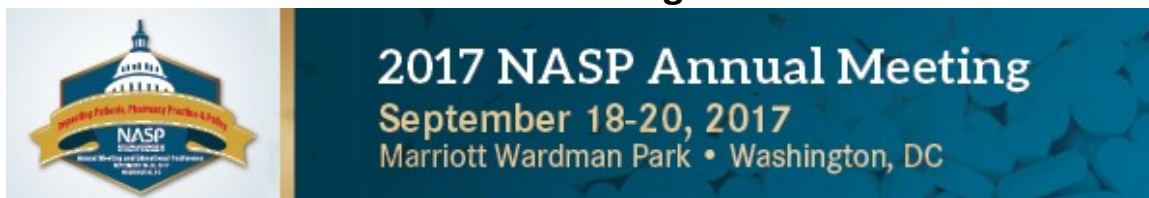
Conclusions: PAs have become more common especially with the current national focus on healthcare costs. The challenges found are similar to those faced by other HCPs when handling PAs. In future studies, more information should be gathered regarding specific challenges pharmacists encounter and their views on solutions for PA process improvement.

Keywords: Prior Authorization, Pharmacist, Challenges

Sponsorship: No

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Annual Meeting Abstracts



[Poster #11: Medication Adherence to Biologics for Treating Chronic Inflammatory Disease Among Patients Through Local Specialty Pharmacies. - Zhu J, Witt E, Kirkham H.](#)

Background: Chronic inflammatory diseases (CID) encompasses various conditions - including rheumatoid arthritis, Crohn's disease, and ulcerative colitis - that are all characterized by a prolonged and persistent pro-inflammatory state. CID affect millions of Americans and typically require lifelong medication therapy. Adherence to CID medications is often suboptimal due to injectable administration, high costs, and lack of education for new-to-therapy (NTT) patients. Low- or nonadherence can lead to potential adverse outcomes and higher medication costs.

Objectives: To evaluate medication adherence among NTT and non-NTT patients at local specialty pharmacies.

Methods: This retrospective cohort study used pharmacy claims to examine medication adherence of CID patients prescribed biologics at a regional health center and received LSP services from 01/01/2014–12/31/2016. Patients ≥ 18 years whose first fill are at least 91 days before 12/31/2016 were included in the study. Medication adherence was measured using proportion of days covered (PDC) within 12-month and 24-month follow-up periods. The 12-month PDC was calculated for patients who had ≥ 2 biologic medication claims in 2014, 2015 or 2016; 24-month PDC (01/01/2014–12/31/2015) was calculated for patients had ≥ 1 biologic medication claim in 2014 and ≥ 1 in 2015.

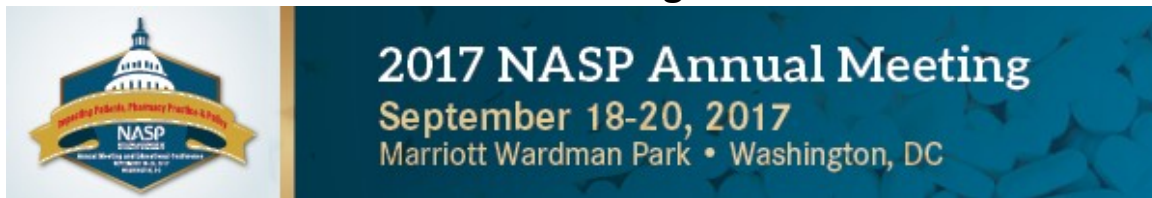
Results: As for 24-month PDC calculation, of 178 eligible patients, the majority were female (111 patients, 62.4%) and ≥ 50 years (106 patients, 59.6%). For patients who were only on 1 medication during the period (8 patients switched medications), the most prevalent CID medications were etanercept (50.0%), adalimumab (40.0%), and tofacitinib citrate (3.5%); the remaining 6.5% were other biologics, such as certolizumab pegol and golimumab. The overall 24-month mean PDC was 66.8%, and mean PDC rates of etanercept and adalimumab were 68.2% and 69.8% respectively. Compared to NTT patients ($n=102$), non-NTT patients ($n=76$) had a higher mean PDC (71.7% vs. 63.2%, $p=0.03$). Patients ≥ 50 and male patients seemed to have higher adherence rates compared to patient < 50 years and female patients (71.6% vs. 59.9%, $p=0.003$ and 71.8% vs. 63.8%, $p=0.05$). **Conclusions:** This study provides real-world evidence of medication adherence for both NTT and non-NTT patients on biologics. Given most patients were NTT and all received injectable biologics, our results were optimal compared to PDC rates reported in the literature (Fidder, 2013; Doshi, 2016).

Keywords: Chronic inflammatory disease, medication adherence, new-to-therapy, local specialty pharmacy

Sponsorship: Yes, Walgreen Co.

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Annual Meeting Abstracts



[Poster #12: Patient Experience With a Pharmacy Fertility Video Consultation Program: A Pilot Study. - Zhu J, Staskon F, Scalia A, Patel K, Lipari S, Miller R, Kirkham H.](#)

Background: Walgreens Video Connected Care Program (VCCP) is a pilot program utilizing HIPAA compliant web-based video conferencing technology to communicate with patients who received injectable fertility medications, most often gonadotropins. This pilot program allows fertility professionals to provide real-time educational training and support as well as review fertility order shipment contents for patients at a time and location convenient to the patient— and at no additional cost.

Objectives: The aim of this study was to assess patient satisfaction with the VCCP program and compare it with the existing literature.

Methods: This is a descriptive survey using convenience sampling. An online survey was offered to eligible patients who received a video pharmacy consultation service from Walgreens. Participants were asked to rate 12 items on a 7-point Likert scale and answer 3 open-ended questions via a web-based survey tool. Psychometric properties of the questionnaire were examined for reliability and item characteristics.

Results: Among 104 eligible patients, 39 (37.5%) patients accepted and received VCCP consultation service during the period from February 1, 2017 to August 19, 2017. Of these 39 patients, 25 patients completed and returned the satisfaction question survey with a response rate of 64.1%. Of those surveyed, the average age was 35.8 ± 4.3 years. The 12 question rating scale indicated acceptable reliability ($\alpha=0.72$), with a mean of $82.1/84$ ($SD=4.4$), and satisfaction on all 12 questions was indicated by 92.0% of patients. To note, 96% of patients strongly agreed they were overall satisfied and would recommend this service to others (100% patient agreed on these questions). In responses to the open-ended question of further improvement indicated little need for improvement. Exploratory scale analysis indicated 12 questions reflect two dimensions: technological quality and service satisfaction. With this breakout, reliability increases to $\alpha=0.77$ for technological quality and $\alpha=0.94$ for service satisfaction. These results compared favorably with the high satisfaction levels included in the systematic review studies examining reported patient satisfaction for community pharmacy (Panvelkar, Saine, & Armor, 2009) or video consultation (Kitamura & Zurawel-Balaura, 2010) or telemedicine (Mair & Whitten, 2008).

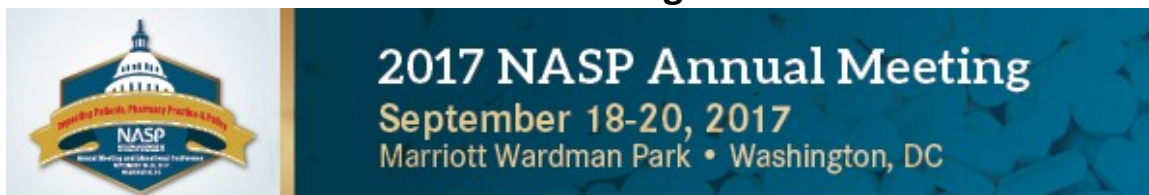
Conclusions: Video conferencing is a promising solution for individuals undergoing complex medication therapy by offering a more personalized pharmacy experience that could help alleviate patient anxiety or concern with medication administration. With the limited sample size, preliminary survey results suggest high patient satisfaction with the video consultation services offered by VCCP. Further analysis with a larger sample will validate the dimensionality of the scale.

Keywords: Infertility, patient satisfaction, pharmacy services, survey, video consultation

Sponsorship: Yes, Walgreen Co.

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Annual Meeting Abstracts



Poster #13: Exploring Length of Therapy and Factors Associated With HIV Pre-Exposure Prophylaxis (PrEP) Medication Adherence Using Pharmacy Claims Data. - [Hazen R](#), Hou J, Kirkham H, Pietrandoni G, Delpino A.

Background: Pre-exposure prophylaxis (PrEP), if used consistently, is effective at preventing HIV transmission. Once-daily emtricitabine and tenofovir disoproxil fumarate (Truvada®) for PrEP is currently the only FDA-approved drug to prevent HIV transmission. The CDC recommends PrEP counseling for several patient groups at-risk groups for HIV infections—estimated to be 1.2 million individuals in the United States. Little is known about PrEP use outside of clinical trials.

Objectives: To characterize PrEP usage by examining length of therapy, gaps in therapy, and adherence using real-world pharmacy claims data. To examine factors associated with PrEP adherence, including demographic variables and use of Walgreens HIV specialized pharmacies (HIV-sp), which support adherence through personalized medication adherence counseling.

Methods: We conducted a retrospective cohort study using Walgreens prescription pharmacy claims data. A random sample of 15,000 PrEP users from calendar years 2013 to 2016 were included if they filled a PrEP prescription for >90 days in the index year. Patients were excluded if they had evidence of combined ARV therapy during the study period. Average length of therapy and the proportion of patients with gaps in therapy were calculated. Medication adherence, measured as proportion of days covered (PDC), was calculated for each patient and analyzed by demographic variables and use of HIV-sp.

Results: On average, patients used PrEP for 157 days consecutively without gaps; 55.6% of users had a >7 day gap in consecutive days of PrEP coverage during the index year. The mean PDC was .88 and 64.0% of users achieved high adherence (PDC >90%). HIV-sp users were more likely than non-HIV-sp users to be highly adherent (OR, 1.39; 95% CI, 1.27-1.52, P<.0001). Those 50 or older were 2.70 times more likely to be highly adherent than those 18 to 24 years old (CI, 2.34-3.14; P<.0001). Women were less likely to be highly adherent than men (OR, 0.67; CI, 0.56-0.80; P<.0001) as were urban vs. rural PrEP users (OR, 0.86; CI, 0.77-0.95; P=.0052, Urban defined as “large central metro,” “large fringe metro,” and “medium metro” FIPS codes).

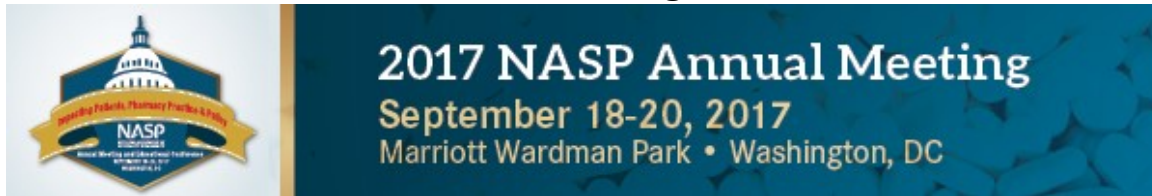
Conclusions: PrEP adherence was significantly associated with age, gender, store type, and urban-rural metropolitan statistical area (MSA). These results highlight the importance of adherence counseling among specific populations and illustrate differences in adherence by service setting. Future research should investigate improved methods for calculating adherence and length of therapy for PrEP.

Keywords: HIV prevention, PrEP, medication adherence, specialized pharmacy

Sponsorship: Yes, Walgreen Co.

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Annual Meeting Abstracts



Poster #14: Multiple Sclerosis Medication Adherence Within Walgreens Local Specialty Pharmacies Is Significantly Higher Compared With Other Class-of-Trade Pharmacies. - [Staskon E](#), Fu C, Kirkham H.

Background: Walgreens local specialty pharmacies (LSPs) are on health system campuses and located in communities that focus on managing complex chronic health conditions such as cancer, HIV/AIDS, hepatitis C, multiple sclerosis, CID, transplant and cystic fibrosis. For patients with multiple sclerosis (MS), LSPs provide personalized, comprehensive pharmacy care, copay assistance and have access to therapies, even those with a limited distribution label.

Objectives: To compare patient adherence for MS medication therapies for patients treated at Walgreens LSPs to patients treated at food stores, mass merchandisers, independent pharmacies, traditional Walgreens pharmacies or other chain stores (ie, class of trade, CoT). A second objective compared the same cohort of MS patients' adherence with non-specialty drug treatment groups of oral antidiabetics, antihypertensives, and antihyperlipidemics from LSPs to CoT.

Methods: QuintilesIMS conducted a retrospective cohort design using their longitudinal retail prescription database (LRx) that includes pharmacy claims information across CoT. Inclusion criteria required patients to be exclusive to the Walgreens cohorts and compared with exclusive CoT patients from January 2015 to December 2015. Additional requirements included patient having at least 2 sold MS medications and being least 18 years of age. MS medications included were glatiramer acetate, interferon beta-1a, interferon beta-1b, peginterferon beta-1a, teriflunomide, alemtuzumab, natalizumab, dimethyl fumarate, dalfampridine, and fingolimod HCl. Proportion of days covered (PDC) was calculated at the drug subclass level and then overall as either a weighted average or average level of adherence. For the comorbid conditions, PDCs were calculated at the same subclass level, but reported at the drug group level, using the weighted average approach.

Results: For MS medications, mean PDC in Walgreens LSPs (M = 78.5) was significantly higher than the CoT cohorts ($P < .0001$; mean CoT PDC ranged from 75.0-72.1). The adherence rate (percent of patients with $PDC \geq 80\%$) was significantly higher in Walgreens LSP compared to CoT cohorts ($P < .0001$). Mean PDC levels indicated no significant differences between cohorts for antihypertensives or antihyperlipidemics.

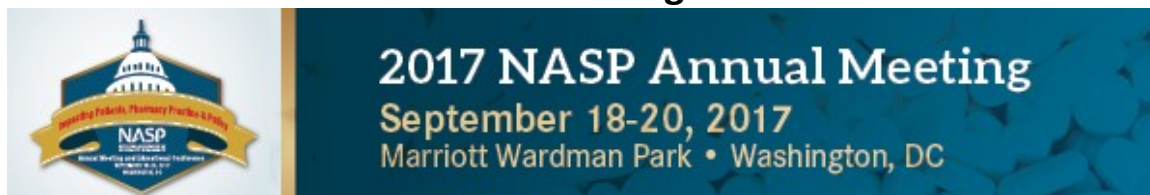
Conclusions: Patients utilizing Walgreens LSPs for their MS medications were significantly more adherent to these medications than other CoT pharmacies and similar to CoT pharmacies in levels of adherence to antihypertensives or antihyperlipidemics.

Keywords: medication adherence, pharmacy trade types, multiple sclerosis, chronic diseases

Sponsorship: Yes, Walgreen Co. (the study sponsor) and QuintilesIMS™ (performed the analysis).

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Annual Meeting Abstracts



[Poster #15: Assessing the Impact of High Touch Specialty Pharmacy Services in Patients Receiving Teriparatide. - Singleton E, Litten K, Boils B, Burkes S, Bagwell A.](#)

Background: Teriparatide is the first FDA-approved anabolic hormone that stimulates bone growth in patients with osteoporosis. Recommended duration of teriparatide treatment is up to 2 years. However a significant amount of patients do not complete the recommended 2 years of treatment. Nonadherence has been shown to result in a higher risk of fracture, all-cause medical costs, and frequency of inpatient service utilization. In 2013, the Vanderbilt Specialty Pharmacy (VSP) integrated a clinical pharmacist into the Vanderbilt University Medical Center (VUMC) Endocrinology Clinic to assist with continuity of care for patients beginning teriparatide treatment. Assessing this model of care and its impact on patient adherence to treatment can lead to decreased medical costs, improved patient satisfaction and patient outcomes.

Objectives: The primary objective is to evaluate teriparatide completion rates between patients who receive this medication through VSP using a high-touch integrated specialty pharmacy model compared with those prescribed teriparatide prior to VSP integration. We will evaluate the number and types of pharmacy interventions provided in this model. By quantifying these specific aims, we hope to demonstrate the impact of a specialty pharmacist in an integrated specialty care model.

Methods: This is a single-center, retrospective, cohort study of patients prescribed teriparatide treatment between 2009 to 2010 and 2014 to 2015 by a provider at the VUMC Endocrinology Clinic. Patients were excluded if they had previously received a prescription for teriparatide but did not complete treatment. The primary endpoint was teriparatide completion among patients serviced through VSP compared with those prescribed teriparatide before VSP integration.

Results: A total of 192 patients were reviewed, 132 patients prescribed teriparatide between 2009-2010 and 60 prescribed between 2014 to 2015 that used VSP services. Baseline characteristics between the two groups were similar, with the majority being female and Caucasian. Completion rates were higher in those using VSP services (58.3%) compared with those prescribed treatment prior to VSP integration (48.5%).

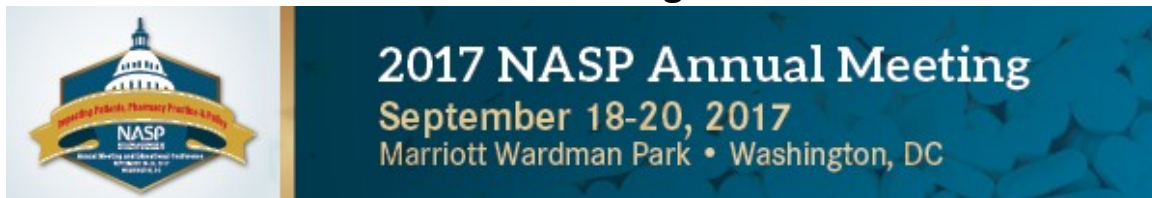
Conclusions: Following VSP integration, teriparatide completion rates rose by approximately 10%, correlating with a 20% change. These results demonstrate the benefits of this integrated model of care. Additional data on pharmacist interventions will be presented.

Keywords: adherence, teriparatide, endocrinology, specialty pharmacy, health-systems specialty pharmacy

Sponsorship: No

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Annual Meeting Abstracts



[Poster #16: Retreatment of Genotype 1 Hepatitis C Virus With Sofosbuvir, Simeprevir, and Ribavirin Following Treatment Failure With an NS5a-Containing Direct-Acting Antiviral Regimen. - Carver A, Porayko M.](#)

Background: The aim of this study was to evaluate the efficacy, defined as sustained virological response (SVR), in patients with hepatitis C virus (HCV) treated with sofosbuvir (SOF), simeprevir (SIM), and ribavirin (RBV) following relapse after treatment with an NS5a-containing direct-acting antiviral (DAA) regimen in routine medical practice.

Objectives: The primary endpoint of this study was SVR at minimum of 12 weeks following treatment completion. Secondary endpoints included viral responses on therapy, adverse events, and treatment discontinuations.

Methods: This was an observational cohort of HCV patients that received retreatment with SOF + SIM + RBV for 24 weeks prescribed at an academic medical center between January 2015 and December 2016. Eligible patients had a diagnosis of genotype (GT) 1 chronic hepatitis C, had to have previously failed treatment with an NS5a-containing DAA regimen, and were subsequently prescribed SOF + SIM + RBV for 24 weeks. No patients meeting these criteria were excluded.

Results: Thirteen patients (male, 84.6%; black, 23.1%; median [range] age, 53 years [23-65]; GT1a 84.6%; GT1b 15.4%; median [range] baseline HCV RNA 3.05x10⁶ IU/mL [2.7x10⁴-2.14x10⁷]) met criteria and were included. Two (15.4%) patients had previously undergone liver transplantation. Cirrhosis was present in 8 (61.5%) patients. Among cirrhotic patients, 3 (37.5%) were Child-Pugh (CTP) A and 5 (62.5%) were CTP B, with median [range] MELD scores of 9.5 [6-12.8] points. Previous NS5a-containing DAA treatment consisted of ledipasvir/sofosbuvir (LDV/SOF) (92.3%) or paritaprevir/ritonavir/ombitasvir + dasabuvir (PrOD) + RBV (7.7%). The Q80k substitution was present in only 1 (7.7%) patient; however, this patient was not cirrhotic and did achieve SVR. Overall, 12 of 13 (92.3%) patients achieved SVR. All 13 (100%) patients achieved HCV RNA below lower limit of quantification (<15 IU/mL) while on treatment. The 1 patient that failed treatment had a positive viral load at end of treatment. Also, this patient had cirrhosis (CTP A) and was the only patient to previously fail treatment with PrOD + RBV. The most common side effects were fatigue (69%), headache (38%), mood changes (31%), nausea (31%), rash/itching (23%), and anemia (23%). All 13 (100%) patients completed entire 24 week treatment course of SOF + SIM + RBV.

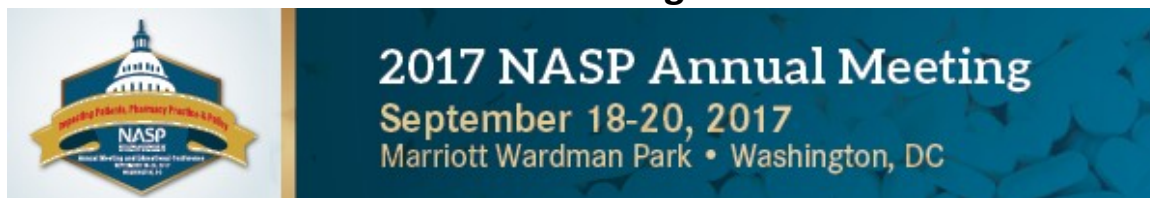
Conclusions: Our findings reveal that the use of SOF + SIM + RBV for 24 weeks is highly efficacious and well-tolerated in patients who previously failed treatment with an NS5a-containing DAA regimen.

Keywords: hepatitis c, sofosbuvir, simeprevir, ribavirin, retreatment

Sponsorship: No

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Annual Meeting Abstracts



[Poster #17: Improving Adherence to Multiple Sclerosis Disease Modifying Therapies Through an Integrated Specialty Pharmacy Model. - Jolly J, Markley B, Banks A, Bagwell A, Holder G, Zuckerman S.](#)

Background: The area of specialty pharmacy has seen tremendous growth over the past several years, particularly through the development of specialty pharmacies by health systems. Since the inception of the Vanderbilt Specialty Pharmacy (VSP) at Vanderbilt University Medical Center (VUMC) in 2011, clinical pharmacists have been integrated into nearly thirty specialty clinics, including the Vanderbilt Multiple Sclerosis (MS) Center. While previous articles have described varying degrees of involvement of pharmacists in specialty clinics, the impact of these services on patient outcomes, including adherence to MS therapies, remains largely unknown.

Objectives: The objectives are to describe the dynamic role clinical pharmacists play in the multidisciplinary care of MS patients at the Vanderbilt MS Center, along with present preliminary data on medication adherence rates of patients on self-administered immunomodulatory therapy using VSP.

Methods: This is a single-center, retrospective, cohort study that assessed the adherence rates of MS patients on immunomodulatory therapy using VSP through the reporting of medication possession ratio (MPR) and proportion of days covered (PDC) data. Pharmacy claims data from January 2016 to December 2016 were analyzed for patients with MS treated with the following medications: interferon beta-1a, interferon beta-1b, peginterferon beta-1a, glatiramer acetate, fingolimod, teriflunomide, and dimethyl fumarate.

Results: A total of 653 patients with MS were included in this study. Overall MPR was 92.9%, and PDC was 94.25%, with 88% of patients achieving an MPR above the industry standard of 80%, and 89% of patients achieving a PDC greater than 80%. Average out of pocket cost for patients was \$29.78, with 77% of patients having a \$0 out of pocket cost. Further analysis will be completed and presented to determine if out of pocket cost has a positive impact on medication adherence.

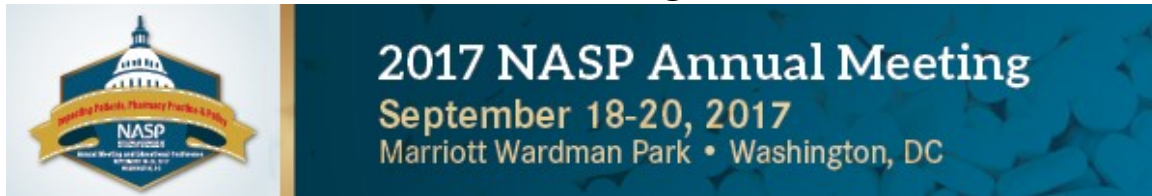
Conclusions: VSP clinical pharmacists play a unique role as care coordinators for patients in the MS Center. This multidisciplinary model has aided in patients using VSP to achieve higher medication adherence rates than the industry standard.

Keywords: adherence, multiple sclerosis, pharmacy

Sponsorship: No

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Annual Meeting Abstracts



Poster #18: Impact of an Integrated Clinical and Specialty Pharmacy Service Model on Medication Adherence Among Adult Patients With Pulmonary Arterial Hypertension. - [Mitchell R](#), Shah N, Terry S, Jolly J, Slack S, Bagwell A.

Background: Pulmonary arterial hypertension (PAH) is a progressive disease often resulting in frequent hospitalizations and high healthcare costs. Though PAH remains incurable, 2 phosphodiesterase inhibitors (PDE-5I) demonstrate improvements in exercise capacity and a reduction in clinical worsening. Despite these benefits, PAH patient's adherence to PDE-5I's remain low. Vanderbilt Specialty Pharmacy (VSP) clinic pharmacists integrated in the Vanderbilt University Medical Center (VUMC) PAH clinic, have an opportunity to improve adherence. Analyzing adherence rates of patients receiving comprehensive medication management through VSP will help determine the impact integrated specialty pharmacies have on improving outcomes.

Objectives: The primary objective of this study is to quantify medication adherence in PAH patients seen at VUMC PAH clinic and followed by VSP. The secondary objective of the study compares hospitalization rates between the adherent (proportion of days covered (PDC) $\geq 80\%$) and non-adherent patients.

Methods: This is a single-center, retrospective, cohort study of adult patients prescribed tadalafil, sildenafil or brand sildenafil (Revatio[®]) and receiving care through VSP (defined as at least 3 prescription claims). Adherence was assessed by calculating medication possession ratio (MPR) and PDC using pharmacy claims data from January 1, 2014 through December 31, 2016. The percent of patients meeting a dichotomous measure of adherence (defined as $\geq 80\%$ PDC and MPR which is the industry standard) was also measured. Possible confounders to adherence were evaluated including prescription insurance provider and total out-of-pocket (OOP) cost. Hospitalization rates were assessed using retrospective chart review.

Results: A total of 162 patients were included in the study. More than half the patients were female (69.8%). Mean age at study initiation was 54 years. Roughly half of patients (54.9%) were classified as WHO Group 1. For PDE-5I therapy, 39.5% of patients were prescribed sildenafil or Revatio[®] and 67.9% of patients were prescribed tadalafil. Mean OOP cost was \$1,279 with 54.9% of patients receiving financial assistance. Of the 162, 148 patients (91.4%) had PDC $\geq 80\%$ and 149 patients (92%) had MPR $\geq 80\%$. Roughly 30% of patients (n=48) were hospitalized at least once during the study period.

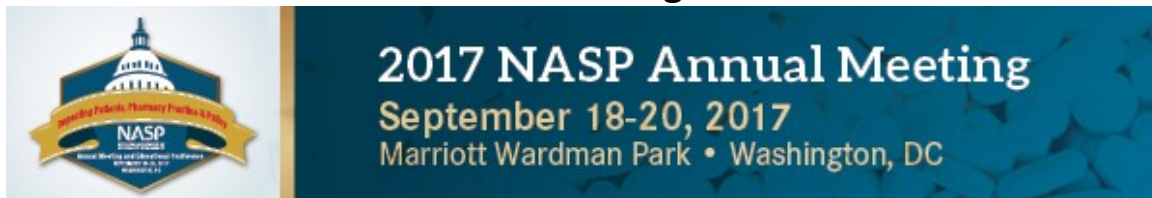
Conclusions: Patients receiving tadalafil, sildenafil or Revatio[®] through VSP's integrated specialty pharmacy model had significantly higher adherence rates as compared with currently defined industry standards.

Keywords: Pulmonary Arterial Hypertension, Medication Adherence, Specialty Pharmacy, PDE 5I, Phosphodiesterase- 5 Inhibitors

Sponsorship: No

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Annual Meeting Abstracts



[Poster #19: Implementing A Collaborative Partnership Model to Assist in the Transitions of Care for Patients Receiving Oral Chemotherapy. - Kornecki P, Skirvin JA, Youn R, Poliskey K.](#)

Background: Patients receiving oral chemotherapy often take medications with increased toxicities and complex dosing, requiring significant education and patient support. These complicated medications are often specialty pharmacy restricted and require comprehensive education. Increasingly problematic concerns arise among pharmacies that manage patients using oral oncological therapies that are related to: Patient nonadherence, chronic toxicity/adverse effects, and financial complications. Identified barriers to care require intervention and collaboration between health systems and specialty community pharmacies to provide optimal outcomes in delivered patient care.

Objectives: An innovative outpatient oral oncology program will provide specialized pharmacy services utilizing multiple platforms and tools to assist the oral oncology patient in their transitions of care through a collaborative partnership between a local health system in Boston and a local specialty pharmacy of a large chain pharmacy. Patient satisfaction will be assessed at the end of the study.

Methods: In this case report, we identified one patient with an initial start on imatinib therapy for newly diagnosed chronic phase chronic myeloid leukemia (CML). A 10-step process was developed that outlined the community pharmacist's role in the transitions of care for a patient receiving oral chemotherapy and was modeled after the Hematology/Oncology Pharmacist's Association recommended approach. The primary end point was to assess patient satisfaction utilizing a developed survey for this pilot program.

Results: At 3 months, a patient satisfaction survey was administered to the patient and their caregiver to assess for the quality of care provided by a community pharmacist. Patient reported ratings were valued at 100% (10 out of 10) in all areas of care, including: Adherence support, communications, confidence in prescription coverage, counseling, delivery, follow-up, pharmacist provided recommendations, and supplied tools. Total communication points during the 3 month follow-up were measured as a secondary endpoint. It was found that 27 total communications were made: 41% involving direct patient care, and 28% involving discussions with payers and providers. Patient adherence appeared 100% based on objective refill history and patient compliance documentation records.

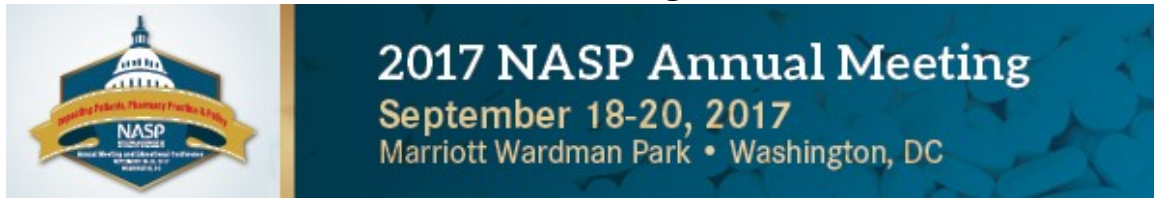
Conclusions: Community pharmacist based integration within the multidisciplinary oncology care team demonstrates positive value provided to the patient.

Keywords: oral chemotherapy, transitions of care, community pharmacy, adherence, patient satisfaction

Sponsorship: No

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Annual Meeting Abstracts



[Poster #20: Evaluating the Impact of Treatment Persistence on the Economic Burden of Moderate-to-severe Psoriasis and/or Psoriatic Arthritis Patients in the US Department of Defense Population. - Lee S, Xie L, Wang Y, Baser O.](#)

Background: Psoriasis (PsO) is a chronic, inflammatory, dermatological condition that may be associated with arthritis [psoriatic arthritis (PsA)]. There remains a shortage of real-world evidence for impact of treatment pattern on the economic burden of PsO patients (pts).

Objectives: Examine the health care costs and utilization between pts who were persistent and nonpersistent to biologics among moderate-to-severe PsO and/or PsA populations.

Methods: Adult pts with at least 2 diagnoses of PsO and/or PsA between November 2011 and October 2015 were identified in the US Department of Defense data; the first diagnosis date during November 2011 and October 2014 defined as the index date. Pts were required to have continuous enrollment during the 1-year pre- and postindex period and were considered moderate-to-severe on index date if they had ≥ 1 nontopical systemic therapy or phototherapy during the 12 months pre- or 1-month postindex date. Persistence to index therapy, defined as the first biologic used (etanercept, adalimumab, ustekinumab, infliximab) within 30 days postindex date, was determined based on the biologic dosing schedule and a 90-day gap. Generalized linear models were used to compare health care utilization and costs between persistent and non-persistent pts during the 1-year postindex period.

Results: A total of 2945 moderate-to-severe PsO and/or PsA pts were identified. Of those, 1899 (64.5%) were persistent and 1046 (35.5%) were nonpersistent. Compared to nonpersistent pts, persistent pts were older (49.2 vs 45.5 years, $P < .001$), more likely to be male (52% vs 45%, $P < .001$), and have a diagnosis of dyslipidemia (40% vs 35%, $P = .002$) and statin use (23% vs 18%, $P = .002$), but lower anxiolytic use (30% vs 37%, $P < .001$). After adjusting for pts demographic and clinical characteristics, nonpersistent pts had a significantly higher number of ambulatory visits (23.9 vs 21.4, $P = .009$), which resulted in higher total medical costs (\$12,448 vs \$8968, $P < .001$) vs. persistent pts. About 40% of the total medical costs were attributed to PsO and PsA. Although persistent pts incurred higher pharmacy costs (\$10,774 vs \$7856, $P < .001$) mainly due to more usage of biologics, their PsO/PsA-related medical costs were significantly lower than nonpersistent pts (\$3414 vs \$5022, $P < .001$). Total costs combining medical and pharmacy costs were similar between the 2 cohorts.

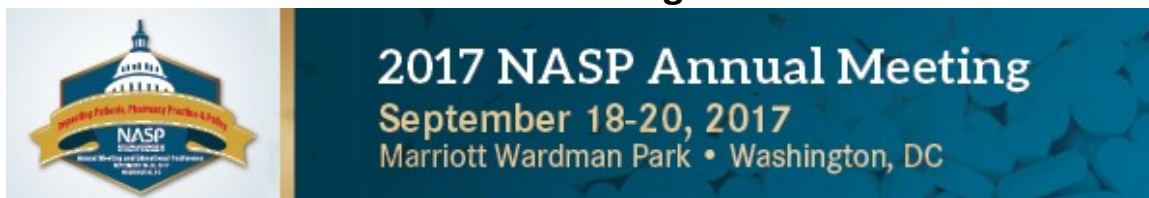
Conclusions: Moderate-to-severe PsO &/orPsA pts who were displaying persistent to biologics incurred significantly lower medical expenditures, albeit with increased pharmacy costs than nonpersistent pts.

Keywords: psoriasis, psoriatic arthritis, biologics, US Department of Defense

Sponsorship: Yes, Janssen Scientific Affairs, LLC

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Annual Meeting Abstracts



[Poster #21: HIV Pharmacist Consultation Services a Key Factor In HIV Continuum of Care and Improvements in Adherence, Quality Of Life, and Decreases in Health Care Costs. - Sherman M.](#)

Background: Antiretroviral therapy is at the center of treatment strategies for HIV-infected individuals. The role of the HIV pharmacist is critical in effective patient adherence, monitoring drug–drug interactions and managing adverse reactions. The pharmacist is an important member of the patient’s health care team, being a pivotal link in the HIV continuum of care. Effective pharmacist consultation programs identify key problems with HIV drug therapy and comorbidities, over-the-counter medications, supplements, and illicit drug use. The pharmacist takes a holistic approach taking into consideration the patient’s mental health, psychosocial situation, identifying problems, and developing solutions and care plans and referrals for the patient promoting positive outcomes and improved quality of life. While improving care, antiretroviral adherence, outcomes, and quality of life, the pharmacist interventions also decrease health care costs, by preventing hospitalizations, decreased medications use, adverse reactions and, in some cases, even death.

Objectives: To demonstrate the value of MTM and disease state management in HIV infected patients and the need for pharmacist reimbursement for consultation services.

Methods: The Ubuntu Pharmacist Care Program is a unique an MTM and pharmacist consultation program of MichRx Pharmacist Consulting Services in Dana Point, California. Consultations are provided to patients at clinics, physician’s offices, AIDS service organizations, and online via HIVThrive.com. Patients are referred from physicians, nurses , case managers, patient self- referral and other health care and community organizations. Problems are identified by the HIV pharmacist specialist and care plans developed and communicated to the patient as well as physicians, family members, case managers, and other entities necessary for improved patient care and optimal results.

Results: From January 2016 though June 2017, pharmacists had 257 face-to-face patient consultations and 280 other contacts (physicians, nurses, case managers, pharmacies, and insurance payors). The pharmacist consultations and collaboration with the healthcare team, AIDS service providers, pharmacies, and insurance payors) has resulted in iproved patient outcomes. Specific outcomes include: Improved adherence with drug therapies, minimized drug–drug interactions, improved health and quality of life, and a decrease in overall healthvcare costs.

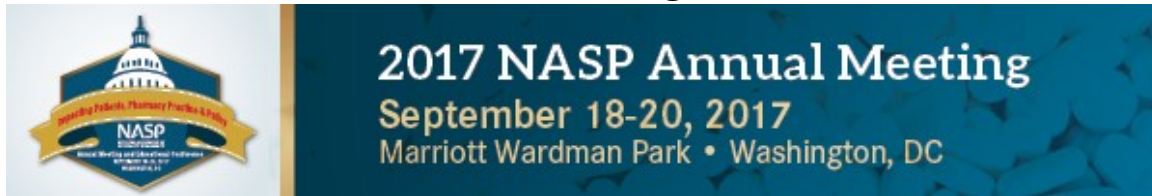
Conclusions: Ubuntu Pharmacist Care Program in collaboration with the HIV team has resulted in improved adherence, improved understanding of medications, linkage to care, improved access to medications, improved adherence, improved outcomes, and improved quality of life. The Ubuntu Pharmacist Care Program has played a significant role in major patient interventions and outcomes that would have otherwise resulted in major patient problems and, in 1 case, death.

Keywords: HIV, Pharmacist, Adherence, MTM

Sponsorship: No

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Annual Meeting Abstracts



Poster #22: WITHDRAWN - Impact of a Community Pharmacy Coordinating the Delivery of a Patient-Specific Vivitrol Prescription to the Patient's Health Care Provider's Office for Administration Through the Total Patient Care Program (TPCP). - [Roberts A](#), [Guisinger S](#), [Fortier D](#).

Background: Naltrexone (Vivitrol®) is a long-acting injectable medication indicated for the prevention of opioid dependency relapse and should be administered intramuscularly in a gluteus muscle by a health care provider every 4 weeks. This product is more convenient than other treatment options that include daily administration, such as methadone or buprenorphine. In interviews performed by the Medication Research Partnership, barriers of naltrexone use included cost, administration, program structures, cultural resistance, and patient stereotypes. The Total Patient Care Program (TPCP) was implemented as a response to these barriers.

Objectives: Work collaboratively with the patient, health care provider, and community pharmacy to eliminate patient barriers to ensure that patients get to the appointment and receive their medication on time.

Methods: Patients were identified by a health plan or provider's office to be enrolled in TPCP at their local community pharmacy. Local pharmacy team performed provider outreach and communicated to get the patient's demographics, insurance information, appointment date and time. The Price Chopper Specialty Pharmacy (PCSP) team would complete a benefits investigation when the prescription was received and coordinate prior authorizations and/or financial assistance, as needed. The day of the scheduled appointment the patient specific prescription was delivered to the provider's office for administration. The local pharmacy team would follow up with the prescriber's office to determine if naltrexone was administered or not and document the outcome. The confirmed doses would be documented and would project the next refill appointment date for the patient. The local pharmacy team maintained ongoing contact with the providers for patient updates and to confirm appointments and coverage.

Results: Seventy-five patients were enrolled in TPCP and a total of 124 scheduled appointments were documented. Out of these, 81 doses were confirmed administered and 19 were considered "missed doses." Due to the TPCP protocol, there were 24 instances where the pharmacist intervened and prevented the delivery and potential waste of a naltrexone prescription.

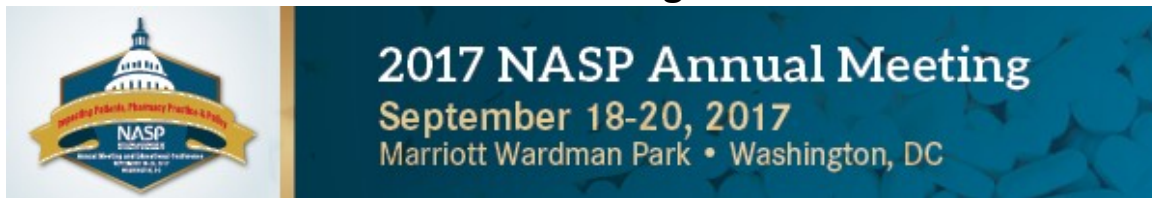
Conclusions: The TPCP improved the adherence of patients getting naltrexone prescriptions at the provider's office due to the convenience and increased engagement with the health care provider and the local community pharmacist.

Keywords: Specialty Pharmacy, Naltrexone, Community Pharmacy, Opioid Treatment

Sponsorship: No

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Annual Meeting Abstracts



[Poster #23: Treatment Patterns and Medication Adherence and Persistence Among Patients With Pulmonary Arterial Hypertension in Real-World Database Representing a Large US Health Plan. - Pruettt J, Hull M, Koep E, Tsang Y, Drake W.](#)

Background: Pulmonary arterial hypertension (PAH) is a chronic and progressive disease characterized by high pressure in the pulmonary arterioles, with increased pulmonary vascular resistance that can result in right heart failure and premature mortality. With several new PAH medications available since 2013, more information is needed regarding treatment patterns, persistence, and adherence.

Objectives: Examine PAH patient initial and subsequent treatment regimens. Describe persistence (measured as months to discontinuation or modification, and adherence (measured as proportion of days covered [PDC])).

Methods: Patients with a diagnosis code for pulmonary hypertension and treated with an approved medication for PAH (ERAs, PDE-5is, prostacyclins, sGCs) identified by pharmacy claims between January 2010 and March 2015 were included. Patients were > 18 years old with continuous enrollment in a large US health plan with medical and pharmacy coverage for 6 months before (with no PAH medication claim) and > 1 year after initiating a PAH-related medication. Patients were followed until disenrollment from the plan or end of study (March 2016). Initial and subsequent treatment regimens were examined. Persistence was measured as months to discontinuation or modification and adherence was measured as proportion of days covered.

Results: The study included 1637 patients. Most patients initiated treatment with a monotherapy (93.8%). PDE-5is and ERAs were used in 70.0% and 26.8%, respectively, of initial treatment regimens. Of patients who discontinued (n = 443) or modified (n = 581) their initial regimen, 78.9% did so within 1 year (mean±SD 7.6±9.0 months, median 4.0). Combination therapies comprised 42.7% (248/581) of second regimens. Patients initiating combination therapy usually did so within 6 months (55.4%). ERAs were associated with higher PDC (0.8±0.4 vs 0.6±0.4, P<.001) and persistence (9.5±10.8 vs 7.5±8.6 months, P<001) than PDE-5is. Combination therapies were associated with greater persistence than monotherapies (11.7±11.1 vs 7.4±8.8 months, P<.01).

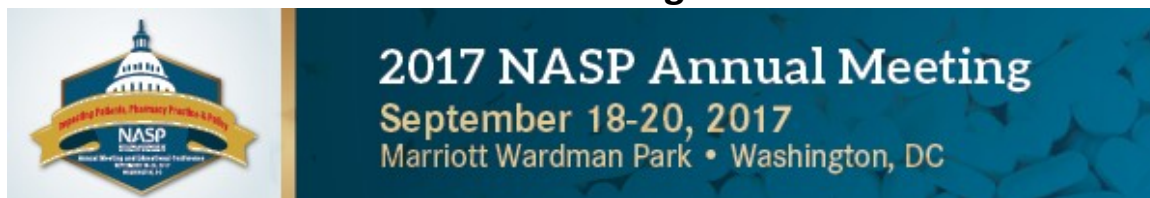
Conclusions: Patients with PAH most often initiated treatment with monotherapies, commonly PDE-5is in spite of lower adherence and persistence than ERAs. Most patients remained treated with monotherapies. Therapy adjustments to initial regimens occurred early and in the majority of patients.

Keywords: Pulmonary arterial hypertension, adherence/persistence, real world database, monotherapy, combination therapy

Sponsorship: Yes, Actelion Pharmaceuticals, US, Inc.

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Annual Meeting Abstracts



[Poster #24: Implementing a Pharmacist-Led Multiple Sclerosis Specialty Pharmacy Clinical Outreach Program. - Taddei-Allen P, King M, Oelofsen M, Page R.](#)

Background: Multiple sclerosis (MS) is a chronic and complicated disease that requires a multifactorial treatment approach to achieve the best clinical outcomes. Improved communication among pharmacy providers, patients, and providers is necessary to achieve the best clinical outcomes.

Objectives: To improve the overall care of patients living with MS through a pharmacist-led clinical outreach program.

Methods: The program focuses on improving patient education, enhancing care coordination, facilitating provider communication, and enabling more robust reporting of patients' responses to treatment. Clinical pharmacists review patient care plans, collect clinical data, and evaluate medication adherence during monthly refill calls. They also perform quarterly assessments and compile quarterly reports based on all the information collected during calls with patients and share their findings with the prescribing provider. Providers also receive an annual report that includes the patient's medication adherence history, MS exacerbations, hospitalizations, missed work days, risk factors, and quality of life measures. Throughout treatment, the provider is alerted if a patient falls below an 80% medication adherence rate or whenever a patient is 30 or 60 days late refilling their medication.

Results: Quarterly assessments have been completed on approximately one-half of our MS population. Most patients participating in this program were diagnosed with MS at least 8 years ago and had experienced 1 to 3 lifetime relapses. The majority of participants had an expanded disability status scale (EDSS) score of 6 or less. The most common symptoms experienced were fatigue, difficulty with balance, and muscle weakness. Only one patient reported missing work due to MS. About 40% of the patients reported that MS slightly affects their daily living activities, and over 95% of patients report not experiencing an exacerbation. To date, the average PDC for MS patients increased from 89% to 91%. Since the program began, the adherence rate has not fallen below 80% for any of the MS patients.

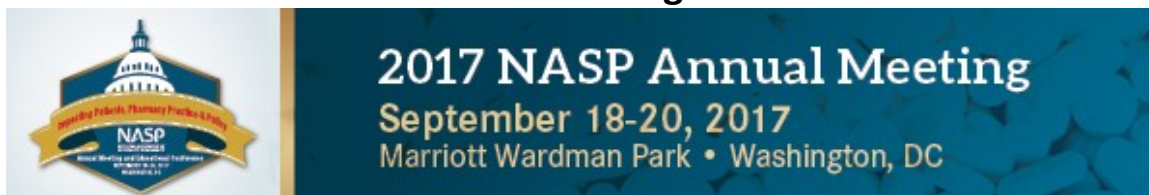
Conclusions: Patient and provider feedback regarding the program has been positive. Several providers expressed that the information provided in the reports is useful in guiding discussions with their patients during visits. Outcomes reporting of the effects of the program on newly diagnosed patients will be a focus in the coming year, as well as tailoring provider reports based on their feedback.

Keywords: Multiple sclerosis, clinical outreach, care coordination, patient engagement, adherence

Sponsorship: No

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Annual Meeting Abstracts



[Poster #25: Retrospective Analysis of Medication Utilization and Clinical Outcomes in Patients With Idiopathic Pulmonary Fibrosis Treated With Nintedanib or Pirfenidone. - Ipatova A, Koerner P, Staskon F, Miller R, Radi M.](#)

Background: Idiopathic Pulmonary Fibrosis (IPF) is a chronic, progressive lung disease that results in thickening and scarring of the interstitial tissue. Loss of normal lung tissue leads to restricted ventilation, impaired gas exchange, and ultimately death. FDA-approved pharmacologic therapies for IPF are limited to nintedanib and pirfenidone. Both medications have been shown to slow disease progression in mild-moderate disease. As the only 2 FDA-approved medications on the market, it is valuable to compare the impact of nintedanib and pirfenidone on clinical outcomes, and how these outcomes are affected by other considerations to therapy, such as medication utilization and patient financial burden.

Objectives: To conduct a retrospective analysis comparing medication utilization and clinical outcomes in patients with idiopathic pulmonary fibrosis being treated with nintedanib or pirfenidone.

Methods: The records of Walgreens Specialty Pharmacy-Central Specialty patients who started nintedanib or pirfenidone between calendar years 2015 and 2016 were retrospectively reviewed. Data collection was derived from patient management applications. Data included patient demographics, medication adherence rates, treatment duration, discontinuation rates, patient reported adverse events, co-payments and financial assistance. Statistical data analysis was completed in SAS (SAS Institute Inc®).

Results: The nintedanib population contained 2605 patients and of the population completing clinical assessment surveys (n = 1343), 46% of respondents (n = 612) reported no adverse events, with the remaining 54% reporting at least 1 adverse event. Average proportion days covered (PDC) was 84.2% (SD = 17.0). Average final monthly co-pay for this group was \$235. The pirfenidone population had 1322 patients and of the surveyed population (n = 764), 58% of respondents (n = 445) reported no adverse events, with the remaining 42% reporting at least 1 adverse event. Average PDC was 83.4% (SD = 17.3). Average final monthly co-pay for this group was \$339.

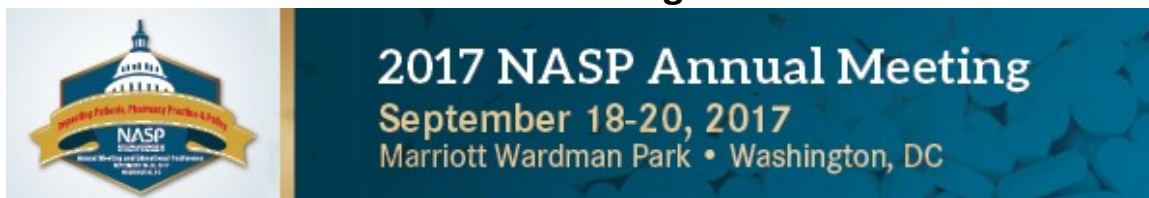
Conclusions: Outcomes in the studied IPF population were similar for nintedanib and pirfenidone. Continued utilization of both medications in the IPF population will help to further establish the place in therapy for these medications and continue to affect patient outcomes through developed utilization and adverse event management.

Keywords: nintedanib, pirfenidone, idiopathic, respiratory, pulmonary

Sponsorship: No

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Annual Meeting Abstracts



[Poster #26: Real-World Data from a Specialty Pharmacy on Sustained Virologic Response \(SVR\) Following Hepatitis C Treatment. - Dominick L, Henry C, Welburn A, Klepser S, Ninke J.](#)

Background: The availability of novel direct-acting antivirals (DAAs) has provided a highly effective treatment option for the estimated 2.7 million to 3.9 million patients with chronic hepatitis C virus (HCV) in the United States. There are an abundance of data from clinical trials demonstrating high DDA SVR rates in controlled environments, but real-world data from patients being managed by a specialty pharmacy are scarce.

Objectives: To report real-world SVR rates for HCV patients managed by a specialty pharmacy for all treatment regimens encountered.

Methods: The availability of novel direct-acting antivirals (DAAs) has provided a highly effective treatment option for the estimated 2.7 million to 3.9 million patients with chronic hepatitis C virus (HCV) in the United States. There are an abundance of data from clinical trials demonstrating high DDA SVR rates in controlled environments, but real-world data from patients being managed by a specialty pharmacy are scarce.

Results: A total of 1132 treatment cases were identified, 412 of which had posttreatment HCV viral load data available. An overall SVR rate of 94.17% (n = 388, 95% CI [91.45, 96.23]) was observed. SVR rates ranged from 95.33% (n = 214, 95% CI [91.57, 97.74]), 92.31% (n = 78, 95% CI [84.01, 97.12]), 89.19% (n = 37, 95% CI [74.58, 96.97]), 97.22% (n = 36, 95% CI [85.47, 99.93]), to 83.33% (n = 6, 95% CI [35.88, 99.58]) for genotypes 1a, 1b, 2, 3, and 4, respectively. Ledipasvir/sofosbuvir-containing regimens accounted for the majority of treatment cases (n = 291) and were associated with a 94.85% (n = 276, 95% CI [91.64, 97.09]) SVR.

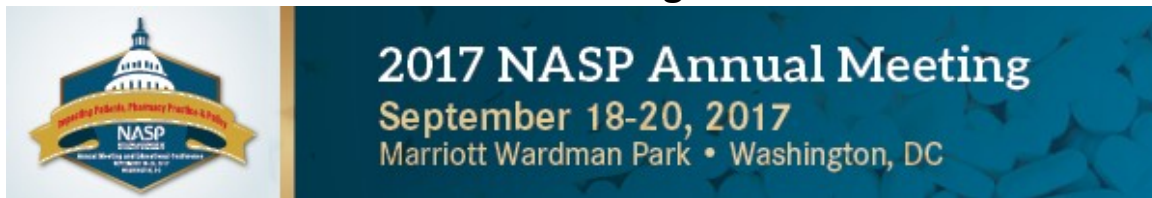
Conclusions: HCV patients managed by a specialty pharmacy achieved an overall, real-world HCV SVR rate of 94.17%, which is similar to rates reported during clinical trials.

Keywords: Hepatitis, SVR, HCV, Outcomes, Treatment

Sponsorship: Yes, OptiMed Specialty Pharmacy

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Annual Meeting Abstracts



[Poster #27: Impact of Nonclinician Liaison Refill Activities on MS Adherence Rates. - Jude D, Budlong H, Sager B, Quintero Fonseca M.](#)

Background: Fairview Specialty Pharmacy is a large regional, health system-owned specialty pharmacy that provides thorough and caring clinical services as well as comprehensive access services. Therapy management (TM) programs are offered for specialty disease states and include nonclinician therapy management liaison refill calls to assist in patient care coordination for HIV, cystic fibrosis and oral oncology programs. TM liaison calls include manual refill calls, personalized relationship-building with liaison, care coordination with pharmacy clinical staff, medication refill synchronization, proactive refill requests to the clinic, pharmacy reconciliation, and customized communication strategies. Fairview implemented a pilot in which patients with multiple sclerosis (MS) below a prespecified MPR threshold were enrolled in the TM liaison call program.

Objectives: Evaluate the impact of personalized TM liaison calls on adherence for MS patients utilizing either oral or self-injectable disease-modifying therapies (DMT).

Methods: An interim analysis was conducted 3 months after initiation of the original 6-month pilot program. A cohort of 60 patients with MS with 12-month medication possession ratio (MPR) less than 0.80 were selected. Outbound enrollment calls were made at program initiation, approximately 7 days prior to refill due date, and as warranted by patient need. We analyzed the average MPR change from baseline and the number of patients who reached the goal of an MPR > 0.80. We also described common reasons for nonadherence and associated nonclinical interventions.

Results: Of the original 60 patients evaluated, 47 patients were reached and received ongoing TM liaison services. Forty-two of those patients were still receiving their prescribed DMT. Of those 42 patients, the average 12-month MPR increased from 0.683 to 0.745. A total of 13 patients (31%) were able to achieve an MPR at or above 0.80. Common reasons for nonadherence included forgetfulness, prior authorization delay, and overstock of medication. Interventions included proactive refill request to clinic, email communications, and triage to access service specialists.

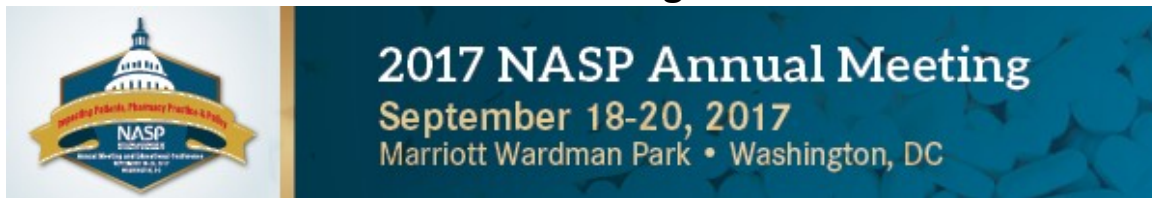
Conclusions: Though this is an interim analysis, the TM liaison interventions show early results. As the pilot continues, durability of MPR improvement will be evaluated. This data supports the value of a non-clinician role in developing a robust and effective approach to non-adherence.

Keywords: Adherence, multiple sclerosis, liaison, intervention, refill

Sponsorship: No

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Annual Meeting Abstracts



[Poster #28: Electronic Prior Authorization Process Experience in an Integrated Health System. - Budlong H, Dorr A, Robinson A, Peterson J, Nelson M.](#)

Background: The prior authorization (PA) process is intended to optimize patient outcomes by ensuring patients are receiving the most appropriate medications while reducing waste, medication error, and unnecessary prescription drug use and costs. However, the response time required to complete the prior authorization process is an area of concern for patients, prescribers, and pharmacists. As of January 1, 2016, Minnesota requires all PA requests be submitted electronically (ePA). To meet the new requirements, Fairview Health System partnered with Fairview Pharmacy Services to ensure successful implementation of new requirements across more than 75 primary care and specialty care clinics, 6 hospitals, 36 retail pharmacies, and specialty pharmacy. A central team was created, consisting of 8 employees with varying pharmacy, clinic, and referral management background responsible for processing all PAs for the health system. Centralization and transition to the ePA process began with 6 clinics in December 2015 and, since January 2016, is expanding systemwide in phases.

Objectives: Evaluate ePA program implementation and impact on PA response time to determine provider acceptance of the new ePA process and determine if PA response times became more efficient than with the prior method.

Methods: We summarized monthly implementation metrics, including enabled and active prescribers, and PA response time from January 2016 to June 2017.

Results: The health system processes about 2700 PA requests per month, currently of which about one-third are processed electronically. Prior to ePA initiation, processing by the health plan took an average of 72 hours. In June 2017, 69% of providers have ePA enabled systems, 56% are active users and 3572 medication orders were submitted via the ePA process. Of the submitted orders, 702 required a PA and had a median response time of only 1.3 hours.

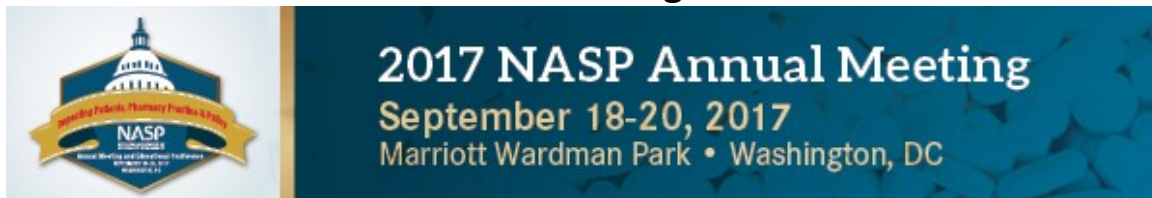
Conclusions: Implementation of an ePA system can decrease PA response time from days to almost 1 hour. This process provided several benefits to our health system including: 1) Removing the responsibility of completing PA requests from individual clinics; 2) Removing the PA work from the pharmacy workflow; and 3) Increasing the proportion of patients that are able to obtain PA-required medications the same day the prescription was written. Regular provider education, increased pharmacy benefit manager connectivity, and EHR system upgrades will help expand use of ePA across our health system.

Keywords: Electronic, Authorization, PA

Sponsorship: No

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Annual Meeting Abstracts



[Poster #29: Evaluating Real-World FEV1 Changes Before and After Starting Lumacaftor/Ivacaftor. - McNamara A, Budlong H, Peterson J, Otto R, Yang P, Ehler K.](#)

Background: Cystic fibrosis (CF) is a life-threatening disease caused by defective or deficient cystic fibrosis transmembrane conductance regulator (CFTR) protein activity. Patients with CF experience a progressive decline in lung function, primarily monitored by the percent predicted forced expiratory volume in 1 second (FEV1%-pred). Furthermore, FEV1%-pred allows for classification of disease severity and has been shown to be related to survival. One of the newer medications, lumacaftor/ivacaftor (LUM/IVA), has a novel mechanism of action and demonstrated to not only improve FEV1%-pred but reduced exacerbations and hospitalizations.

Objectives: Evaluate real-world FEV1%-pred changes after starting LUM/IVA in patients at least 21 years of age with a FEV1%-pred baseline of 90% or greater.

Methods: Using CF Center registry data and dispense data, we identified patients ≥ 21 years of age with a baseline FEV1%-pred $\geq 90\%$ when starting LUM/IVA. Patients were required to have: 1) initiated lum/iva dispense between 7/20/2015 and 6/1/2016; 2) at least one FEV1%-pred measurement available for three time periods (-2 years, -1 year, 1 year post-lum/iva initiation); and 3) continued use of LUM/IVA during the 1-year post-LUM/IVA period identified by a dispense between December 1, 2016 and June 1, 2017. FEV1%-pred varies significantly within individuals and can decline substantially when a patient experiences an exacerbation. Due to this inter-individual variability, we utilized average annual FEV1%-pred as the measure to assess overall lung function. The change in average annual FEV1%-pred between time periods was used to describe the impact of LUM/IVA.

Results: Thirteen patients met all inclusion criteria of whom 54% were female with an average age of 33 years. Before starting LUM/IVA, 6 (46%) patients had declining average annual FEV1%-pred, of whom 3 were more than -0.5%, and 4 patients had improvements of 1% or less. After starting LUM/IVA, the change in average FEV1%-pred was positive in 11 (85%) patients, 2 of whom had an increase greater than 5%. Two patients had decreased average annual FEV1%-pred of -0.1% and -3.6%.

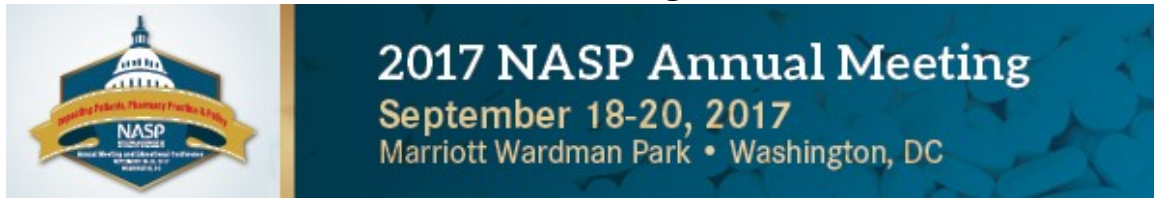
Conclusions: We provide preliminary data to suggest that adult CF patients with FEV1 $\geq 90\%$ benefit from LUM/IVA. After starting LUM/IVA, a greater percentage of patients reported positive lung function changes. Further research is needed to better understand long-term impact to patient outcomes.

Keywords: Cystic fibrosis, lung function, FEV1, lumacaftor/ivacaftor, Orkambi

Sponsorship: No

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Annual Meeting Abstracts



[Poster #30: Hepatitis C Treatment Completion: Real-World Experience Compared with Measure Assumptions. - McNamara A, Budlong H, Otto R, Peterson J, Jude D.](#)

Background: Fairview Specialty Pharmacy performs pretreatment verification and posttherapy assessments for hepatitis C (HepC) patients to ensure: 1) Patients receive the most appropriate treatment regimen; 2) Therapy is started at a time that promotes completion; 3) Patients complete therapy with viral lab results. This information allows for calculation of completion rates based on intended duration. A HepC treatment completion measure was recently developed by the Pharmacy Quality Alliance (PQA) to help standardize quality measurement. This measure utilizes only minimum therapy duration without significant gaps. The purpose of this project was to understand the differences between minimum therapy duration with dispensing records compared to our documented therapy completion information.

Objectives: Describe real-world HepC treatment completion and compare with a published measure.

Methods: We evaluated therapy completion rates for 1215 HepC patients who received their first fill of a direct acting antiviral between January 1, 2016, and December 31, 2016. Completion rates were calculated using both internal documentation, where completion is determined by appropriate number of fills and patient or provider verification, and the published specifications, which uses minimum duration of therapy, and <15 day cumulative gap in days' supply as markers for therapy completion. Reasons for differences between the rates were evaluated.

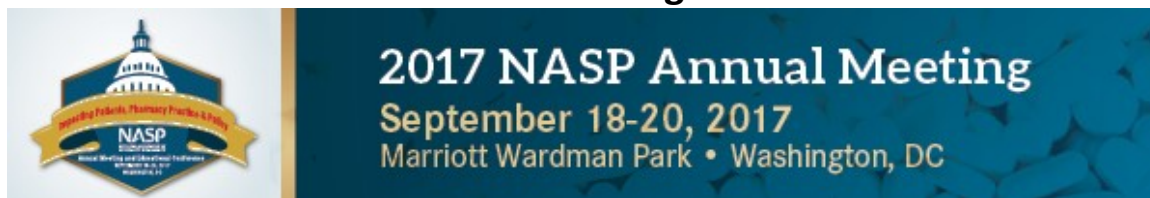
Results: Among the 1209 patients who met all inclusion criteria, 44% had intended treatment duration greater than the minimum duration. Treatment completion rate using the published measure was significantly lower than our documented rate (90.0% vs 97.1%). Using the published measure, 118 patients did not meet the completion criteria; 75 did not meet the minimum duration, 44 had a treatment gap (1 had both). Among the 75 patients, only 22 stopped therapy early. The remaining 53 patients had fills at another pharmacy. Of the 44 patients with a treatment gap, 41 that had the gap between the first and second fills because of appropriate delayed therapy initiation. Our documentation identified the same 23 patients who stopped therapy early plus an additional 11 patients who did not complete their intended duration of therapy. **Conclusions:** HepC completion rates determined by dispensing data alone may not provide a comprehensive description of treatment experience. The rate differences between the 2 methods highlight potential limitations for pharmacies relying only on dispensing data.

Keywords: Hepatitis C, Quality, Adherence, Treatment

Sponsorship: No

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Annual Meeting Abstracts



Poster #31: Impact of a Specialty Pharmacist in Optimizing Treatment Outcomes With Self- Administered Biologics in Rheumatoid Arthritis Patients. - [Hussain R](#), Duarte J, Strachan A.

Background: Self-administered biologics used to treat rheumatoid arthritis (RA) are among the costliest therapy class in the United States, accounting for nearly 10% of total pharmacy spend, owing to long-term treatment for this chronic condition. Although these therapies have gained commercial success, many publications have reported low adherence and high unresponsiveness rates which directly reflects on their efficacy. Pharmacists can contribute to the comprehensive care of patients with RA, especially through monitoring of disease activity and adherence programs to drive improved quality of life.

Objectives: Evaluate the impact of a Specialty Pharmacist in optimizing treatment outcomes of self-administered biologics in patients with RA through education and utilization of disease activity scales (DAS).

Methods: A retrospective, cohort study was conducted on patients who received biologics for treatment of RA, identified by ICD 9 codes from January to December 2014. The primary outcomes of discontinuation and adherence rates for the year period, were tabulated. Adherence, measured by medication possession ratio (MPR) was calculated as the sum of the days' supply for all claims during a defined period divided by the number of days elapsed during the period. Secondary outcomes to measure rate of switching from most frequently prescribed biologic Adalimumab to another agent were further assessed. These results were then compared with outcomes extrapolated from Commcare's RA Management Program from January to December 2015 and January to December 2016, respectively, after the onboarding of a specialty pharmacist dedicated to patient-specific supportive care through monthly outreach assessments.

Results: The discontinuation rates were unchanged at 14% for all 3 groups, however the number of patients switching from adalimumab to another agent decreased significantly from 25% in 2014 to 9% in 2015 and to 7% in 2016, respectively. Factors attributing to discontinuation were loss of insurance, exhausted benefits on co-pay cards, noncompliance and failure to achieve clinical response. The overall average MPR score for biologics; tocilizumab, xertolizumab, etanercept, adalimumab, golimumab and tofacitinib increased significantly from 85% in 2014 to 90% in 2015, and 93% in 2016, respectively. Additionally, routine assessment of DAS contributed to higher MPR scores and clinical outcomes.

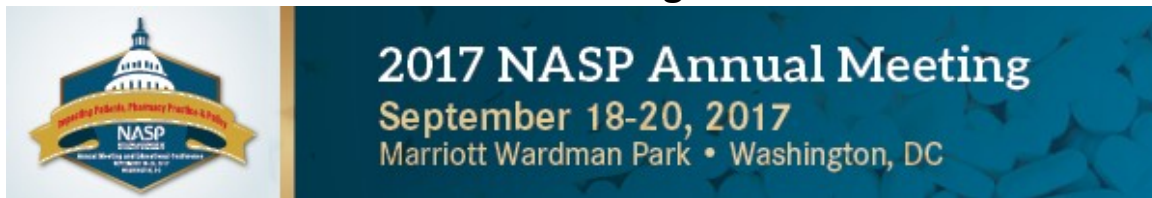
Conclusions: A specialty pharmacist can significantly improve adherence rates while ensuring patients obtain maximum benefit from a prescribed biologic, rather than swiftly switching to another.

Keywords: Pharmacist, rheumatoid arthritis, Biologics, adherence, discontinuation rates

Sponsorship: No

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Annual Meeting Abstracts



Poster #32: Multidisciplinary Process Improvement Optimized Oral Chemotherapy Safety and Quality. - [Havriliak R](#), Stutsky M, Adelson K, Kregling S, Ouellette T, Lee L, Smith M, Harrison M, Abdelghany O, Cohen H.

Background: Nationally, oral chemotherapy has been highlighted as an area of high risk and medical error. Our Quality Oncology Practice Initiative certification identified opportunities for improvement in our oral chemotherapy processes that include: lack of documentation in the medical record, refills received from third-party pharmacies after prescription discontinuation, incorrect self-administration of medications, delivery delays, and underuse of available patient assistance programs.

Objectives: To implement an oral chemotherapy medication care model that supports access to medications in a timely manner, patient adherence to regimens, and provides ongoing patient monitoring.

Methods: A multidisciplinary task force reviewed existing practice and developed a program to ensure drug access, standardize prescription and consent processes, and provide clinical support including patient education and toxicity assessment. The model includes nursing and pharmacist reviewed electronic orders, an internal specialty pharmacy, co-pay assistance from manufacturer sponsored or disease state organization grants, pharmacist to patient phone calls, and multidisciplinary documentation.

Results: Since inception of the program in February 2015, over 120 treatment plans for oral chemotherapy were created. Over 95% of disease teams and care centers in the system are participating in the program, which received over 1000 oral chemotherapy prescriptions in May 2017. Turnaround time was under 72 hours in 67% of prescriptions, compared to an average of 7 to 14 days with external specialty pharmacies. Pharmacists' interventions included order clarifications, correction of dosing schedules, recommendation of dose increases or decreases, and identification of drug interactions (N = 1287). The average score for the Press Ganey Survey question regarding the ease of oral chemotherapy prescription dispensing was 91.2 (N = 696) while the score for the question regarding education was 91.6 (N = 647). In 2016, co-pay support from external grants or funds exceeded \$1.3 million.

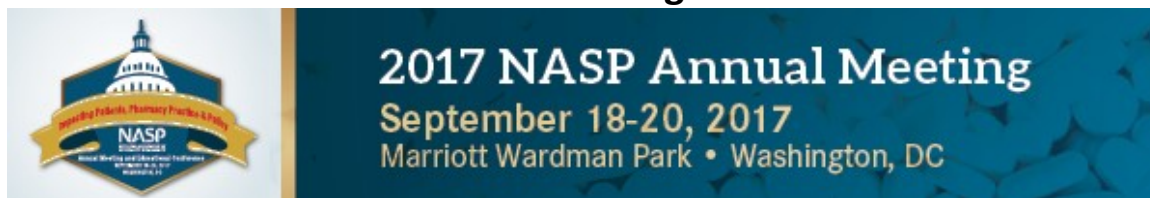
Conclusions: A patient-centered multidisciplinary care model integrating clinical, operational, and financial resources optimized safety and quality of care for patients receiving oral chemotherapy. At a time with great financial pressures within health care where health systems services are increasingly stretched, the program's financial benefits may be further evaluated and implemented.

Keywords: oral chemotherapy, medication assistance program, QOPI, oncology

Sponsorship: No

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Annual Meeting Abstracts



[Poster #33: Patient Medication Liaisons: A Novel Approach to Growing Health System Specialty Pharmacy.](#)
- Gatzke C, Chisholm J, Myers B, Butkievich L.

Background: While many health systems operate specialty pharmacies, challenges with limited distribution drugs and payor access continue to shift business outside of the system, leading to fragmentation of care and lost revenue. In an effort to adapt to rapidly changing trends in pharmacy practice, one health system developed a novel approach to implementing specialty pharmacy services.

Objectives: The health system set out to create a unique specialty pharmacy model that was sustainable and scalable. Moving away from a traditional call-center based model, specialty pharmacy employees were placed directly in specialty clinics to increase specialty prescription volume, revenue and dispensing efficiencies, decrease clinic prior authorization (PA) burden, and improve patient satisfaction, communication, and outcomes.

Methods: The specialty pharmacy model was developed around new clinic-based positions that would complete medication PAs, pursue co-payment assistance and act as a liaison between patient, provider, and pharmacy staff. Patient Medication Liaisons (PMLs) are certified pharmacy technicians whose focus was to become fully integrated members of both clinic and pharmacy teams. From PAs to refill reminders, PMLs document all interventions within the electronic medical record, specialty management software and pharmacy dispensing system. Metrics, including specialty prescription volume, revenue, co-payment savings, PA turnaround time, and adherence, were collected and shared with clinic and pharmacy staff monthly.

Results: Within the first 9 months, 7 PMLs were trained and deployed among 9 specialty clinics covering 18 disease states. During the first year, PMLs increased the capture rate of specialty prescriptions from 2% to 39% and exceeded consultant revenue projections by 176%. PMLs saved patients \$1.28 million in out-of-pocket expenses and facilitated faster initiation of therapy by improving average PA turnaround time from 9 days to 16.8 hours. PML-driven refill management helped patients achieve an overall medication possession ratio of 92%.

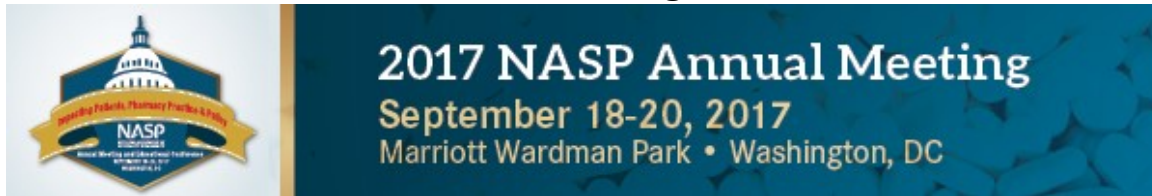
Conclusions: Placing knowledgeable pharmacy employees directly into specialty clinics is advantageous to the health system and patients. The PML model not only cultivates robust relationships, but also increases communication and process efficiency. Clinic-based PMLs improved pharmacy metrics, health system financials, and patient outcomes.

Keywords: Patient Medication Liaison, PML, health system

Sponsorship: No

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Annual Meeting Abstracts



Poster #34: Impact of a Dedicated FTE Resource in a Health System-based Hepatitis C Service. - [Cruse D.](#)

Background: With the introduction of multiple direct-acting antiviral (DAA) therapies, the hepatitis C virus (HCV) treatment landscape has changed significantly over the past few years. Measurement of eradication of disease, sustained virologic response (SVR), has increased to more than 95% with introduction of new regimens. This unique opportunity to achieve cure has resulted in the need for dedicated services to ensure successful treatment, especially with the cost associated with HCV therapy.

Objectives: To evaluate clinical outcomes with utilization of a dedicated full-time equivalent (FTE) resource versus a decentralized resource for HCV patient management services in the outpatient setting.

Methods: This quality improvement, retrospective study was conducted at a large academic medical center during July 2015 to March 2017. Patients 18 years or older with HCV were considered for inclusion if treated by a provider at our institution with laboratory data available through the electronic health record (EHR). Primary outcome measure was sustained virologic response (SVR) at 12 weeks post completion of therapy. Secondary outcomes included viral load at 4 weeks, SVR post SVR12, SVR not collected and unknown, and treatment failure.

Results: A total of 152 patients were included with 78 in the dedicated FTE group and 74 in the comparator group. Average age was 57 years \pm 9 and 36% were female. Other baseline characteristics were not statistically significant except HIV coinfection ($P = .003$). The majority of patients in the intervention group had commercial insurance ($P < .001$). Achievement of SVR12 was statistically significant in those managed by the dedicated resource versus those who were managed in a decentralized model with multiple FTEs ($P = .004$). Patients managed by the dedicated FTE resource were more likely to get week 4 labs drawn appropriately, less likely to have unknown SVR12, and have greater long-term follow up with post-SVR12 monitoring ($P = .020$, $P < .001$, $P < .001$, respectively).

Conclusions: This study demonstrates the ability to achieve statistically significant differences in SVR12 as well as better patient follow up and laboratory monitoring in HCV patients when managed by a dedicated FTE resource. With a pharmacist as the dedicated resource who could influence clinical decision-making, provide recommendations on formulary utilization and access, and offer a more targeted clinical follow-up program, we would expect to see even better patient outcomes.

Keywords: Hepatitis C, Pharmacist, Dedicated FTE, SVR, HepC

Sponsorship: No

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