Health Economics Outcomes and Payers’ Perspectives

The following summaries highlight some of the key posters presented at the Academy of Managed Care Pharmacy Nexus14 meeting on October 7-10, 2014, in Boston, MA, focusing on findings with significant implications for payers, employers, providers, policymakers, patients, and other healthcare stakeholders.

Narcolepsy Associated with Increased Healthcare Utilization, Costs, and Reduced Productivity

Narcolepsy is estimated to affect 1 of 2000 persons in the United States. Narcolepsy is characterized by reduced wakefulness and excessive daytime sleepiness, as well as other symptoms (eg, uncontrolled laughing), and can lead to a transient loss of muscle strength. The symptoms of narcolepsy can be controlled by the use of appropriate medications, but such medications do not cure the symptoms.

The symptoms of narcolepsy often affect a patient’s overall well-being as well as daytime productivity, including work-related productivity, and may affect other aspects of the patient’s health. A new population health study investigated the economic burden of this disease, including the patient’s total healthcare utilization, costs, and work productivity, based on self-reported outcomes.

Lead investigator Kathleen F. Villa, MS, Senior Director, Health Economics and Outcomes Research, Jazz Pharmaceuticals, Inc, and colleagues, used data for this analysis from responses to the 2011-2013 US National Health and Wellness Survey, a health-related survey conducted annually that represents a cross-section population in the United States. Specifically, this new analysis is based on responses from 75,000 respondents to the 2011 national survey, 71,157 respondents to the 2012 survey, and 75,000 respondents to the 2013 survey. Respondents who reported ever having been diagnosed with narcolepsy by a physician were matched with controls in a 1 to 2 ratio, based on baseline demographics and health-related risk behaviors (eg, smoking).

Components of the analyses included the impact of narcolepsy on resource utilization, impaired work and overall activity, and associated costs related to each of these components.

The study included a total of 437 patients with narcolepsy who had responded to the survey and were matched with 874 controls.

Loss of work productivity and overall impaired activity were measured by the Work Productivity and Activity Impairment-General Health scale, which includes the following 4 productivity-related categories:
- Absenteeism
- Presenteeism
- Overall work impairment
- Activity impairment.

The analysis of healthcare costs included direct and indirect costs, calculated separately and together (ie, total costs); these were derived from data in the Medical Expenditure Panel Survey and the Bureau of Labor Statistics and were applied as unit costs to calculate resource utilization variables from the national survey.

Direct costs included emergency department visits, hospitalization, and physician office visits. Indirect costs were calculated for respondents who were employed and included absenteeism and presenteeism (independently and combined).

Compared with the utilization in the past 6 months reported by the controls, patients with narcolepsy reported healthcare utilization in the past 6 months that included significantly increased hospitalizations (mean, 0.27 vs 1.02, respectively; \(P < .001\)), increased emergency department visits (mean, 0.44 vs 1.22, respectively; \(P < .001\)), a greater number of office visits (mean, 4.08 vs 10.25, respectively; \(P < .001\)), and more visits to non-narcolepsy specialists, such as psychiatrists (mean, 0.28 vs 0.72, respectively; \(P < .001\)).

Furthermore, compared with the controls, patients with narcolepsy reported significantly greater proportions of work-related missed time in the past week because of several reasons, including absenteeism (mean, 5.6% vs 17.4%, respectively; \(P < .001\)), presenteeism as reflected in loss of productivity while at work (mean, 17.5% vs 40.2%, respectively; \(P < .001\)), over-
Melanoma is the fifth leading cancer in adults in the United States, with an estimated 76,100 new cases likely to be diagnosed this year. Advances in treatment have resulted in increased survival rates in patients with advanced, stage IV disease. A team of researchers investigated the new treatment patterns to calculate the impact on the associated healthcare costs.

Using claims data from the Truven Health MarketScan databases, a team of researchers from Truven Health Analytics and Bristol-Myers Squibb, led by Elisabetta Malangone of Truven Health Analytics, Bethesda, MD, studied treatment patterns and the cost of treating patients with melanoma.

All patients received at least 1 line of therapy; 31% received second-line treatment, 9% received third-line therapy, and 2% received fourth-line treatment.

Specifically, the annual costs for physician office visits were a mean of $7388 for controls without narcolepsy compared with $20,590 for patients with narcolepsy, hospital costs were $6151 for the controls compared with $36,778 for patients with narcolepsy, and the costs for emergency department visits were a mean of $1112 for controls compared with $4769 for patients with narcolepsy.

These findings highlight the substantial economic burden associated with narcolepsy, including increases in healthcare utilization and costs, as well as reduced work productivity and overall impaired activity compared with the general population.

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Patients with stage IV melanoma who had ≥1 inpatient claims or ≥2 outpatient visit claims with a first claim for metastatic melanoma (ie, index date) between October 1, 2010, and June 30, 2013, were included in this study if they had at least 6 months of continuous coverage before the index date.

A total of 643 patients with stage IV melanoma were included in the study (mean age, 58 years); 65% of the patients were male, and 27% had Medicare supplemental coverage.

All patients received at least 1 line of therapy; 31% received second-line treatment, 9% received third-line therapy, and 2% received fourth-line treatment. In all lines of treatment, ipilimumab was the most frequently used, with 34.4% of patients receiving it as first-line treatment, 37.2% receiving it for second-line treatment, 32.7% for third-line therapy, and 36.4% for fourth-line treatment.

The mean duration of first-line treatment was dependent on the type of medication used: 53 days for ipilimumab, 150 days for vemurafinib (which was the longest duration when introduced as first-line therapeutically; P < .001), and overall impaired activity (mean, 25.9% vs 50.9%, respectively; P < .001).

Overall, compared with persons without narcolepsy, patients with narcolepsy had significantly higher annual healthcare costs, including indirect costs per person (mean, $9125 vs $19,852, respectively; P < .001), as well as direct costs per person (mean, $18,586 vs $54,136, respectively; P < .001). This translates to a mean annual total healthcare cost of $60,287 per patient with narcolepsy compared with $22,426 for matched persons without narcolepsy.

Source: Villa KF, Black J, Chervin RD, et al. Resource use, productivity loss, and economic burden of narcolepsy: results from the National Health and Wellness Survey. Poster presented at the Academy of Managed Care Pharmacy 2014 Nexus Meeting; October 7-10, 2014; Boston, MA.

These findings highlight the substantial economic burden associated with narcolepsy, including increases in healthcare utilization and costs, as well as reduced work productivity and overall impaired activity compared with the general population. Ms Villa and colleagues suggest that future research should focus on the impact of clinical comorbidities among patients with narcolepsy on the economic burden of this disease. “Further analyses are needed to distinguish the impact of medical comorbidities as well as treatment on these outcomes,” they concluded.

Treatment Patterns and Total Healthcare Costs in Patients with Advanced Melanoma

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Clinical Pathways Can Improve the Use of Antipsychotic Medications in Patients with Schizophrenia

Schizophrenia is estimated to affect slightly more than 1% of the US population. This condition is characterized by delusions, hallucinations, incoherence, disorganized behavior, and affective flattening. The disease is described as an idiosyncratic syndrome, and its symptoms, such as increased severity or impending disease relapse, may be idiosyncratic in nature and may not represent a group of patients with this debilitating condition. Studies have shown that a lack of adherence to antipsychotic medications can increase relapse rates and can lead to increased health resource utilization and poor prognosis.

A new study investigated the use of treatment pathways as a potential tool toward the improvement of prescribing appropriate antipsychotic medications to patients with schizophrenia, to reduce the use of ineffective treatments and the increased costs of using inappropriate treatments. Joseph Tkacz, MS, of Health Analytics, Columbia, MD, and colleagues used medical and pharmacy claims data to investigate the patient treatment history and medication use patterns, with the goal of finding treatment patterns or pathways that could improve treatment success and reduce the associated costs for patients with schizophrenia.

The study included 2666 patients with a diagnosis of schizophrenia who were members of an Aetna health plan, with medical and pharmacy coverage between 2010 and 2013. The index diagnosis date was defined as the first event in the form of (1) an inpatient hospitalization with an International Classification of Diseases, Ninth Edition, Clinical Modification (ICD-9-CM) schizophrenia diagnosis code 295.xx on the claim, or (2) the first of 2 outpatient visits within 1 year for a patient with an ICD-9-CM schizophrenia diagnosis code on the claim. Patients diagnosed solely with an ICD-9-CM schizophreniform disorder (295.4) or with schizoaffective type (295.7) were excluded from the analysis. To participate in the study, patients had to be eligible continuously for 2 years after the study index date.

During the 2-year study, patients were divided into 4 groups based on their antipsychotic regimen, including (1) a long-acting injectable medication group; (2) an oral concurrent group of patients receiving 2 oral antipsychotics concurrently; (3) an oral switch group, which included patients using >1 oral antipsychotic agent at different times; and (4) an oral stable group, which included patients using 1 oral antipsychotic medication and who had a supply of ≥90 days.

The oral stable group was used as the gold standard of treatment. The mean performance of that
group during the postindex period was used as the primary comparator.

Of note, the patients’ ages differed significantly by group. The patients in the long-acting injectable group and the oral switch group were significantly younger than the patients in the oral stable group, and the patients in the oral concurrent group were significantly older than the patients in the oral switch group (P < .05).

Specifically, after treatment initiation, emergency department visits decreased in all 4 groups, with the greatest reduction seen in the long-acting injectable group, followed by the oral switch group.

Overall, 6 patient instability events were measured in each 90-day quarter, including:
- Inpatient psychiatric hospitalizations
- Psychiatric emergency department visits
- Use of another psychiatric medication
- Other psychiatric behavior
- Change in the frequency of schizophrenia-related outpatient visits
- Proportion of covered days for antipsychiatric medication.

The results showed a growing number of patient instability events before the index event, with the long-acting injectable group and the oral switch group demonstrating the greatest numbers of schizophrenia-related events before starting the treatment regimen. After the initiation of treatment, all groups showed a decrease in the number of psychiatric-related events, with few exceptions.

A group-based effect was seen on the change in total instability events with the initiation of treatment in all groups. The long-acting injectable group showed the greatest reduction in total events, followed by the oral switch group and then the oral stable group. The oral concurrent group showed the least reduction in events across the different measurements analyzed. The overall difference in event reduction between the long-acting injectable and the oral concurrent groups was significant (P < .05). Patients who were switched from their initial treatment to a long-acting injectable showed the greatest reduction in psychiatric-related events.

The investigators concluded that the patient instability events identified in this study “may be useful in the development of case finding tools to facilitate matching patients to the most effective and efficient treatment available.”

Source: Tkacz J, Brady BL, Waters HC, et al. An examination of clinical pathways among a sample of patients with schizophrenia treated with antipsychotic medication: a retrospective analysis of commercial health plan claims data. Poster presented at the Academy of Managed Care Pharmacy 2014 Nexus Meeting; October 7-10, 2014; Boston, MA.

Cost Implications of Therapies to Manage Obesity: A Budget Impact Analysis

Understanding the utilization patterns and cost of a drug can assist health plans to determine the relative value of adding a specific agent to the plan’s formulary and the potential benefits to patients. A recent study analyzed the cost implications for US payers of adding naltrexone-bupropion to a plan’s formulary for the treatment of patients with obesity in the United States, using a budget impact model.

Naltrexone-bupropion is an extended-release, fixed-dose combination therapy recently approved by the US Food and Drug Administration (FDA) for the treatment of obesity and weight management as an adjunct to a reduced calorie diet and an enhanced physical activity program. Other anti-obesity drugs currently approved by the FDA include phentermine, lorcaserin, phentermine-topiramate, and other...
agents (including orlistat).

Using a pharmacy budget impact model, the investigators analyzed the economic impact of adding this anti-obesity medication to a formulary during 3 years for a hypothetical health plan with 1 million members. A secondary analysis included a plan with 500,000 members. The estimates for the number of patients who would be eligible for anti-obesity therapies were based on the US National Health and Wellness Survey (NHWS), a self-reported, cross-sectional survey of the US population.

Based on the NHWS, a 1-million member plan would include 627,467 patients who are obese or overweight. Of these, only an estimated 3,360 patients would be receiving an anti-obesity medication in the first year. This number was projected to increase by 9.6% in the second year and by 11.3% in the third year, for a total of 4098 patients.

The market share of the combination of naltrexone-bupropion was estimated to be 5.4% in year 1, 7.7% in year 2, and 8.6% in year 3, based on current market shares of phentermine (80%), lorcaserin (5.4%), phentermine-topiramate (6.7%), and 7% from other agents.

By adding naltrexone-bupropion to current anti-obesity therapies on the formulary, the total budget impact would be $1,863,877 in year 1, $2,137,873 in year 2, and $2,430,471 in year 3. Without the addition of this combination therapy to the formulary, the total budget impact would be $1,529,952 in year 1, $1,606,766 in year 2, and $1,763,833 in year 3.

For a plan size of 1 million members, adding naltrexone-bupropion to the formulary would result in a per-member per-month (PMPM) cost of $0.03; for a population of 500,000 members, the PMPM cost would be $0.04.

Overall, the addition of naltrexone-bupropion to the anti-obesity therapies on a formulary would result in a cost of less than $0.05 PMPM. The investigators note that this analysis does not include the cost implications of treatment discontinuation; therefore, it is likely that the budget impact of adding this combination therapy would be even lower than the current PMPM estimated cost. The investigators conclude that “there may be additional relevant costs to a health plan that have not been captured in this analysis, including cost offsets associated with fewer health-related complications as a result of weight loss from anti-obesity medications.”

Source: Gordon J, McEwan P, Bron M, Ward T. The economics of anti-obesity treatment: evaluating the budget impact to payers in the United States associated with new and existing anti-obesity medications. Poster presented at the Academy of Managed Care Pharmacy 2014 Nexus Meeting; October 7-10, 2014; Boston, MA.

Real-World Healthcare Utilization and Medical Costs Lower with Dabigatran than with Warfarin in Patients with Nonvalvular Atrial Fibrillation

Approximately 2.6 million Americans are diagnosed with atrial fibrillation, and 95% of them have nonvalvular atrial fibrillation (NVAF). The recently approved novel oral anticoagulants are increasingly used as an alternative to warfarin therapy in the treatment of patients with NVAF.

This new retrospective cohort study compared real-world all-cause healthcare resource utilization and associated medical (excluding pharmacy) costs in patients with newly diagnosed NVAF who initiated therapy with warfarin or with dabigatran, the first FDA approved novel oral anticoagulant, between October 1, 2009, and September 30, 2013. Data were collected from the electronic medical record (EMR) database of Humedica, which includes information for more than 30 million members across 38 states.

After matching for baseline demographics, 1945 patients with newly diagnosed NVAF who were newly treated with dabigatran or with warfarin were included in each cohort. The patients’ mean age was 70 years, and 58% were male. All patients had ≥1 EMR encounter 12 months before the index date, which was defined as the date of first prescription fill for Real-World Healthcare Utilization and Medical Costs Lower with Dabigatran than with Warfarin in Patients with Nonvalvular Atrial Fibrillation

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Payers’ Perspectives on Accountable Care Organizations in Oncology

Accountable care organizations (ACOs) have been promoted as a potential way to deliver cost-effective patient care. However, its embrace in cancer care has been slow, in part because the ACO model is a departure from the fee-for-service model that is common in oncology.

A team of researchers from Xcenda has conducted a survey of its payer members in the Managed Care Network (MCN), which includes payers in commercial health plans, Medicare Advantage/prescription drug plans, Medicaid health plans, integrated healthcare delivery systems, and pharmacy benefit managers. Together, MCN members, which consist mainly of medical and pharmacy directors, represent approximately 100 million covered lives in a variety of regional and national health plans.

Two electronic surveys were sent to MCN payer members; a total of 48 members responded to the June 2012 survey and 58 payers responded to the January 2014 survey. The questions were focused on the health plan’s current and future involvement in ACOs and their potential strategies for implementing an oncology-specific ACO. Furthermore, the survey presented details of an oncology ACO pilot program to gauge the interest of payers in such a program. The requirements for the proposed pilot program included:

- Provide 24/7 access to care for patients with cancer
- Offer preventive and/or survivorship care
- Encourage patients and families to actively participate in the patient’s care
- Coordinate cancer care across medical facilities, including primary care and electronic health records
- Actively monitor or manage adverse events.

Payers would provide a monthly management fee to participating offices and practices. Participant oncologists would also be able to share in any payer cost-savings resulting from the pilot ACO.

The investigators compared the responses between 2012 and 2014 to determine any difference in trends between these 2 periods. Overall, compared with 2012, payers expressed less interest in an oncology pilot ACO; in 2012, 50% of payers reported no plans to implement such an ACO; that percentage was up by 16% in 2014, with 66% of payers reporting no such plans. In 2012, 13% of survey responders reported their plans have already implemented an

dabigatran or for warfarin.

The all-cause per-patient per-year (PPPY) mean number of hospitalizations was lower with dabigatran than with warfarin (1.07 vs 1.20, respectively; \( P < .001 \)); similarly the mean number of emergency department visits and physician office visits were lower with dabigatran than with warfarin (0.36 vs 0.51 and 10.64 vs 18.13, respectively; \( P < .001 \)).

Furthermore, the patients receiving dabigatran had a significantly shorter hospital stay compared with those receiving warfarin (4 days vs 4.6 days, respectively; \( P < .001 \)).

The mean direct medical costs PPPY for hospitalization were $10,513 with dabigatran versus $17,768 with warfarin; the mean PPPY emergency department costs were $374 versus $531, respectively; and for office visits the costs were $2712 versus $4622, respectively (all \( P < .001 \)). The mean total medical costs were also lower with dabigatran ($13,600) compared with warfarin ($22,920; \( P < .001 \)).

Lead investigator Matthew Sussman, MA, Boston Health Economics, Waltham, MA, and colleagues noted that the cost data were not available in the EMR database and “had to be imputed from an external data source.” Furthermore, they added, “pharmacy costs could not be assessed due to the insufficiency of NDC [National Drug Code] data for each observed prescription in the EMR data set.”

Source: Sussman M, Sutherland S, Ghate S, et al. All-cause healthcare resource utilization and associated medical costs among newly diagnosed non-valvular atrial fibrillation patients treated with dabigatran or warfarin within integrated healthcare delivery networks. Poster presented at the Academy of Managed Care Pharmacy 2014 Nexus Meeting; October 7-10, 2014; Boston, MA.
Patients with early-stage non–small-cell lung cancer (NSCLC) have poor prognosis: 40% of patients with stage I NSCLC and 66% of patients with stage II disease will die within 5 years of diagnosis. A team of investigators who have studied the benefits of a new prognostic test for lung adenocarcinoma suggest that this “may indicate some of these patients may be high risk and would benefit from adjuvant chemotherapy (ACT),” which has been shown to reduce the risk for disease recurrence in patients with stage II but not stage I NSCLC.

The team of researchers from the University of Utah, College of Pharmacy, in Salt Lake City; Myriad Genetic Laboratories, Inc, Salt Lake City; and Harvard School of Public Health, Harvard University, Boston, investigated the cost-benefit of a recently introduced test for early-stage NSCLC. Developed by Myriad Genetics and known as “myPlan Lung Cancer,” this prognostic test has been shown to predict the mortality risk in patients with early-stage NSCLC with adenocarcinoma histology and can guide the decision about the use of ACT in this patient population.

The team developed a Markov model to compare the cost-utility of using the prognostic test versus a standard-of-care strategy in patients with early-stage NSCLC. The base case model included 10,000 patients; the probability of receiving ACT with either standard of care or after the prognostic test was estimated based on a survey of 101 physicians who treated patients with NSCLC and varied by disease stage and risk stratification; the cost outcomes were calculated in 2011 US dollars, and cost-effectiveness was measured by quality-adjusted life-years and incremental cost-effectiveness ratio (ICER). Patients were classified as high risk if their 5-year mortality risk on the prognostic test was more than 22%.

Based on this base case model, a total of 42.6% of the patients with early-stage NSCLC received ACT in the prognostic test arm compared with 27.3% of patients who received ACT in the standard-of-care arm.

These findings reveal a clear reduction in the interest of managed care health plans regarding oncology-specific programs as a way to manage their members who have cancer.

Source: Knight JM, Denno M, Allen L, et al. Managed care perspectives on accountable care organization implementation: focus on oncology. Poster presented at the Academy of Managed Care Pharmacy 2014 Nexus Meeting; October 7-10, 2014; Boston, MA.

Prognostic Test Cost-Effective in Patients with Early-Stage Lung Adenocarcinoma

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cluded that “the results of this study suggest that using the prognostic test to guide ACT decisions in NSCLC is cost-effective compared to a SoC [standard-of-care] approach according to globally accepted thresholds.”


Workplace Onsite Pharmacy Improves Medication Adherence of Employees

Medication nonadherence is a well-known factor that is linked to worsening health outcomes, increased healthcare utilization, and associated costs. Employers are increasingly offering services to improve their employees’ well-being.

A team of researchers from Cerner Corporation investigated the long-term impact of an onsite pharmacy at its Kansas, MO, offices on medication adherence among its employees. Kathleen M. Aguilar, MPH, of Cerner Research Services, Culver City, CA, and colleagues performed a retrospective analysis of pharmacy claims data between January 1, 2009, and December 31, 2011.

Members with a pharmacy claim for asthma, depression, diabetes, hyperlipidemia, or hypertension were followed for 365 days after the first prescription fill between these dates. Participants had to have 6 months of health plan coverage before the first prescription fill after January 1, 2009, and continuing coverage for the next full year.

Medication possession ratio (MPR) was calculated for the total drug supplied for 365 and 730 days. A total of 2498 employees were included in the analysis.

Overall, the results showed that employees who used the onsite pharmacy were more likely to fill their prescriptions and adhere to their medication regimen. Across all types of drugs, the average MPR was significantly higher for patients using the onsite pharmacy than for those using offsite pharmacy services ($P < .001$); this was true at 365 days and at 730 days.

In addition, the average number of days to discontinuation of all drug types was also significantly greater for employees using the onsite pharmacy than for those using an offsite pharmacy ($P < .001$).

Ms Aguilar and colleagues concluded, “The association of improved medication adherence with onsite pharmacy use was found across the included chronic conditions.”

Source: Aguilar KM, Hou Q, Miller RM. Impact of onsite pharmacy on medication adherence: an updated analysis. Poster presented at the Academy of Managed Care Pharmacy 2014 Nexus Meeting; October 7-10, 2014; Boston, MA.