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ASSESSING MENTAL ILLNESS IN THE WORKPLACE USING DRUG CLAIMS DATA

PHASE I: GENERAL CONTEXT & CO-MORBIDITIES WITH DEPRESSION

OCTOBER 2007

Respectfully Submitted to:

Global Business and Economic Roundtable on **Addiction** and **Mental Health**

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INTRODUCTION

The Global Business and Economic Roundtable on Addiction and Mental Health ("Roundtable") invited Cubic Health Inc. ("Cubic Health") to use its combined expertise in the area of prescription drug claims data analysis and clinical pharmacy practice to complete this research project on behalf of the Roundtable. This first report, entitled "**Assessing Mental Illness in the Workplace Using Drug Claims Data – Phase I: General Context & Co-morbidities of Depression**", is based upon blinded, non-personally identifiable data generously provided by the Great-West Life Assurance Company (GWL). The authors of this study are very grateful to GWL for their support of this initiative and their willingness to provide such a substantial data set for analysis.

This data set spanned the calendar years of 2004 and 2005 and included all prescription drug claims paid for approximately 118,000 and 121,500 unique claimants in each of the two years, respectively. Over 1.2 million drug claims paid in each year represented a total drug spend of $57.3 million and $59.7 million in 2004 and 2005, respectively. Employer groups from six different industries were represented in this data set including retail trade, manufacturing, service, public administration, construction and transportation.

The objectives of Phase I of this research project were as follows:

- To quantify the incidence of mental illness claimants within the plan member population
- To quantify the spending on mental illness therapies relative to other disease states within the working age population
- To examine the utilization and spending trends within the "Employees Only" subgroup to see what trends exist within the workplace itself
- To investigate the spending and utilization trends within the following component disease states that make up mental illness across all plan members and within the Employees Only subgroup:
    - Depression
    - Psychoses
    - Anxiety
    - Sleep Disorders
    - Attention-Deficit Hyperactivity Disorder (ADHD)
    - Alzheimer's Disease
- Investigate the co-morbidities that exist within the subset of claimants who have made claims for one or more antidepressants to determine what other disease states commonly impact this group, and what impact the subgroup of depression claimants has on total plan spending

The data set for this research project includes over 22,000 unique mental illness claimants in each year, and over 150,000 claims for a mental illness related therapy in each of the two years.

THE IMPACT OF ADHERENCE WITH THERAPY: A LOOK AHEAD TO PHASE II

The Roundtable and Cubic Health have already begun work in planning for the second phase of this project. Whereas Phase I focused on the impact of mental illness and depression in a greater, macro-level context, Phase II will research behaviour at the individual patient level by investigating adherence to therapy (also referred to as compliance with therapy), and the impact of suboptimal adherence to antidepressant drug therapy for Canadian employers.

It is widely accepted that in North America, as many as half of all patients receiving chronic pharmacotherapy for conditions such as high blood pressure, high cholesterol, depression, and diabetes do not properly adhere to their drug regimen as prescribed by their physician. A lack of adherence to therapy can have significant negative implications for Canadian employers, especially in areas such as mental illness. It can lead to greater absenteeism, lower productivity, and eventually to short-term or long-term disability.

Suboptimal adherence can take many forms: failing to refill prescriptions at the proper interval, not taking the daily doses at the proper times (or in the proper quantity), discontinuing therapy without the consent of the prescribing physician, and failure to fill the initial prescription for a given condition.

This phase of the research project will measure and compare adherence to antidepressant therapies for all plan members, for the employee population, and ideally, for those individuals on disability. The report will differentiate and quantify unique reasons for suboptimal adherence including:

- Prescription refills at inappropriate intervals
- Drop-off in therapy (i.e. the first claim for an antidepressant is filled but no other claims are filled thereafter)
- Drop-off in therapy after a dosage change/product change
- Discontinuation of therapy within the first six months of treatment

Given the significant genericization of most major antidepressants on the market including leading products such as Effexor XR® (venlafaxine), Prozac® (fluoxetine), Paxil® (paroxetine), Celexa® (citalopram), Zoloft® (sertraline), and Wellbutrin® (bupropion), the cost of treating mild to moderate depressive conditions has decreased to roughly $1 per patient per day in many cases. While some may suggest that suboptimal adherence benefits the employer drug plan costs through fewer claims, any increases in the incidence of absenteeism and disability due to poorly managed depression have negative financial consequences which quickly surpass the cost of drug treatment.

With its unique ability to analyze and interpret adherence to therapy across a representative data set, Cubic Health is looking to assist the Roundtable in demonstrating a business case to employers with respect to the need for educational initiatives to ensure that claimants with depression are properly supported and adhering to their prescribed therapies.

ACKNOWLEDGEMENTS

Cubic Health would like to acknowledge the following companies and individuals for their support and assistance in making this research project a reality:

- **Bill Wilkerson**, Global Business and Economic Roundtable on Addiction
- **Great-West Life Centre For Mental Health in the Workplace**
- **Mike Schwartz** and **Loretta Kulchycki**, Great-West Life Assurance Company
- **Mitch Green** and **Anne Ramsay**, CFO Task Force

ABOUT CUBIC HEALTH

Cubic Health Inc. is proud to serve as an Advisor to the Roundtable. In this capacity, the company volunteered its resources to the Roundtable to complete Phase I of this research project in the hopes of bringing new, meaningful, Canadian-specific, and workplace-specific data to the Roundtable to assist it in its objective to encourage Canadian employers to embrace and address mental illness in the workplace.

Cubic Health is a drug plan management company founded in 2003 by a team of licensed, practicing pharmacists. Cubic Health has developed a proprietary suite of analytics tools and reporting applications that allow for detailed analysis of drug claims data. The company also maintains a comprehensive *Cubic Health Canadian Drug Database*™ that tracks drug information for over 62,000 drug products.

Cubic Health's objective is to assist all stakeholders in the provision and funding of prescription drug plans in ensuring the sustainability of the benefit in the face of unprecedented financial pressures. The company also specializes in measuring the impact of drug plan trends on disability costs, and measuring the return on investment of health and wellness initiatives in the workplace.

Cubic Health works with benefits consultants, brokers, medium- to large-sized Canadian plan sponsors, claims adjudicators, and provincial/territorial governments.

For any further information or questions regarding this report, please contact Mike Sullivan at (416) 203-1446 ext. 221 or Chris von Heymann at (416) 203-1446 ext. 222.

EXECUTIVE SUMMARY

MENTAL ILLNESS IN THE WORKPLACE – GENERAL CONTEXT

The research for this report considered a data set with over 2.5 million claims and close to $120 million in drug claims spending by Canadian employers spanning six different industries in 2004 and 2005. This data represented claims from over 117,000 and over 121,000 unique claimants in 2004 and 2005, respectively. The overall incidence of mental illness seen within this sample population is in line with the figures found in the *Cubic Health Claims Database*™. As a result, it was concluded that this sample population is representative of the broader working population in Canada.

The incidence of mental illness seen within this population is noteworthy: nearly one (1) out of every five (5) claimants made a claim for a mental illness related therapy in each year. Depression alone made up 70% of total spending in the area of mental illness in 2004 and two-thirds of spending in 2005. While psychoses has a much lower incidence in the general population, the high unit cost of antipsychotic therapies relative to antidepressants makes it more prevalent in the overall cost considerations.

Although depression makes up a vast majority of spending in the area of mental illness, it represents only about half of all claims in this area (53% of all claims paid for mental illness in 2004, and 52% in 2005). This can be explained by the fact that the therapies for anxiety and sleep disorders, conditions also falling within mental illness, are generally very inexpensive. Therefore, while these two disease states may not have notable cost trends, their utilization levels are much more substantial.

The incidence of depression alone was 12% for all plan members and nearly 14% in the Employee population. This finding translates into one (1) out of every seven (7) Employees making at least one claim for an antidepressant each year.

The most significant findings emerged when the financial impact of the population of depression claimants was compared to the population of claimants without depression. In 2004, employee claimants with depression had an average annual drug claims spend that was <u>two and one-half times</u> higher than employee claimants without depression: $1,265 versus $503 per person. In 2005, those figures rose to $1,311 and $514, respectively. Similarly, this depressed population claimed an average of 28.8 and 30.5 claims per person per year in 2004 and 2005, respectively, almost three times higher than the averages of 8.5 and 8.4 for all other claimants. Similar results were also found in the analysis for all plan members.

CO-MORBIDITIES WITH DEPRESSION ANALYSIS

This section considered employee claimants only, in order to determine the impact of co-morbidities in the workplace and isolate disease states of particular interest to employers who are considering a broader health and wellness strategy in the workplace. Co-morbidity is defined as the presence of one or more disorders (or diseases) in addition to a primary disease or disorder. This analysis measured co-morbidities with depression by measuring the number of employees with depression who are also present in the claimant counts for other disease states. It then isolated those disease states where employees with depression make up a disproportionately high percentage of claimants for another disease state.

The results of this analysis showed that depression had the following top 10 co-morbid conditions:

- Infection, General Bacterial
- Inflammation, Muscle/Bone
- Blood Pressure
- Stomach Hyperacidity
- Mild-Moderate Pain
- Sleep Disorder
- Elevated Cholesterol
- Anxiety Disorder
- Neurological Pain
- Asthma/COPD

It was interesting to note that from the above list of co-morbid disease states, those with the highest proportion of claimants from the employees with depression subgroup, and therefore with the most significant comorbidity with depression, include: neuropathic pain, anxiety disorder, sleep disorder, stomach hyperacidity, and mild-moderate pain. It was not surprising to see the extent of the co-morbidities between depression and other mental illnesses such as anxiety disorder, and between depression and pain conditions. The most interesting finding is in the case of stomach hyperacidity. The number of claimants within that disease state population who had depression was 71 - 74% higher than we would have expected. Given the significance of spending on stomach hyperacidity therapies in most drug plans, this finding is significant.

A recent review article from the respected medical journal Lancet sums this section up best:

"The burden of mental disorders is likely to have been underestimated because of inadequate appreciation of the connectedness between mental illness and other health conditions. Because these interactions are protean, there ***can be no health without mental health.****"* [1]

RESEARCH METHODOLOGY AND DATA NOTES

GENERAL

Cubic Health received non-personally identifiable, transactional, prescription drug claims data from GWL in two separate provisions as Microsoft Access databases. Data from each provision was consolidated into a final data set which represented the following:

- Two calendar reporting periods for 2004 and 2005
- 1,248,790 and 1,282,043 paid drug claims in 2004 and 2005, respectively
- $57,313,429.20 and $59,702,901.34 worth of drug claims in 2004 and 2005, respectively
- Drug claims from 117,769 unique claimants in 2004 and 121,495 unique claimants in 2005
- A cross-section of Canadian employers from GWL's book of business from the following sectors: retail trade, manufacturing, service, public administration, construction and transportation

This final data set was cleaned and separated into two distinct claimant populations for the purposes of this report:

1. ALL PLAN MEMBERS (including Employees, Spouses and Dependents)
2. EMPLOYEES ONLY

The data for each group was then imported into the *Cubic Health Canadian Drug Database*™ (CHCDD) as per standard internal data handling protocols. Once the data was successfully imported, a series of proprietary reporting applications was utilized to meet the objectives stated in the Introduction of this report.

SFC THERAPEUTIC CLASSIFICATION SYSTEM™

An accurate, meaningful breakdown and thorough understanding of the key disease states driving drug plan utilization for a plan sponsor is necessary for future formulary considerations, as well as for targeting health and wellness initiatives to best address these disease states. Comprehensive therapeutic breakdowns by different measurement parameters provide detailed baseline metrics for plan sponsors to calculate return on investment and analyze the success of implemented initiatives.

The analyses included in this report utilize Cubic Health's proprietary *SFC Therapeutic Classification System*™ to provide different therapeutic utilization breakdowns by the following measures:

- Amount Paid ($)
- Number of Claims
- Number of Claimants

The SFC classification system allocates every drug product with a Drug Identification Number (DIN) or Product Identification Number (PIN) available in Canada to a three-tiered structure. The first tier, the *System* allocation, provides a useful overview of the general physical area (e.g. Mental Illness) or major pathology (disease) such as Diabetes. The second tier, the *Function* allocation, provides a more detailed breakdown of the specific disease states the medications and products included therein are used to treat (e.g. Depression). The third tier, the *Class* allocation, classifies each product according to its pharmacological class (e.g. Selective-Serotonin Reuptake Inhibitors). Breakdowns to the SFC Class level are generally reserved for more granular pharmacological class trend analyses conducted by Cubic Health's clinical pharmacy team, and therefore have not been included in this report.

NOTE: In order to provide the greatest degree of accuracy possible, DINs with more than one therapeutic use or indication have been assigned to multiple SFC categories with weighting factors based on current prescribing practices. Therefore, some of the breakdowns by Number of Claims and Number of Claimants will actually show fractional values due to these multiple allocations.

MENTAL ILLNESS IN THE WORKPLACE – INITIAL CONTEXT

INTRODUCTION

Before providing commentary on information obtained from this analysis, it is important to establish the validity of the sample population as representative of the Canadian working population. As has been documented in the highly publicized Senate report on Mental Illness:

> *"In its interim report, the Committee noted the absence of definitive statistics on the prevalence of mental illness and addiction in the workplace."* [2]

In the absence of validated prevalence statistics, the claims pattern seen in this study population was compared to that of a much larger data set. Cubic Health has benchmarked the claims rates for a full spectrum of illnesses (including Mental Illness) based on a database of over 40,000,000 prescription drug claims from Canadian employers in 2006. The Mental Illness claims outlined in TABLE 1 are well within the benchmark values of 10.0 – 12.2% for the percentage of total Amount Paid and 10.4 – 12.7% for the percentage of total Number of Claims. Therefore, one can conclude that Mental Illness claims in this data set are adequately representative of the claiming pattern seen in the broader Canadian employer-sponsored claimant population.

SUMMARY OF KEY FINDINGS & DISCUSSION

The first notable aspect of the results of the analysis is the number of individuals within the sample population making at least one claim for a mental illness drug: just under 20% of the overall population (TABLE 1) and just over 20% for the Employees Only population (TABLE 9). Mental Illness is the second most expensive therapeutic system with just over 11% of the total amount paid for all claims in both 2004 and 2005 (TABLE 2).

As might be expected within the Mental Illness system, Depression is the most prominent condition. Depression claims made up 70% of the cost of all mental illness claims in 2004 and 66% in 2005. Twelve percent of the entire population made at least one claim for a depression drug (TABLE 7), but a slightly higher proportion of the employee population claimed for anti-depressant therapy in each of the two years: 13.7% in 2004 and 13.8% in 2005 (TABLE 15).

This information, while interesting, largely confirms what is already known by employers about claims for mental illness and depression in the workplace. On the other hand, the most revealing aspect of this analysis is contained in TABLE 16 that considers the claiming patterns of employee claimants who make at least one claim for a depression drug versus the overall employee claimant population. As discussed above, approximately 14% of all employee claimants made claims for depression medications in both 2004 and 2005. **However, the average numbers of claims for each of these claimants per year was almost three times greater than for those without depression claims: approximately 30 claims/claimant/year versus 10.8 claims/claimant/year. Similarly, the amount**

paid/claimant/year for drug claims was two and one-half times greater for employee claimants with depression than for those without: $1,265 versus $503 in 2004, and $1,311 versus $514 in 2005. Based on this information, therefore, it is not surprising that claims made by this 14% of the population represented 29% of total amount paid and approximately 30% of the number of claims paid for all employee claimants. These findings are closely mirrored in the analysis for all plan members as well (TABLE 8).

What these figures indicate is that the costs associated with depression or mental illnesses go well beyond the simple value of claims for the drugs that treat them. Patients with mental illness are dealing with co-morbid conditions for which they require additional pharmacotherapy to manage. Although published literature on claims-level analyses is sparse, a study by Gardner et al. looked at the drug claims (as well as all other health related costs) associated with employees with bipolar disorder (previously known as manic depression).[3] This study determined that prescription drug costs were approximately four times higher in patients with bipolar disease then those without ($2,496 per year versus $630). Interestingly, although a majority of the difference in drug costs were related to drugs for mental illness, a substantial amount came from other conditions including circulatory disease, muscle and bone disease and headache/migraine.[3] This study also went beyond drug claims (i.e. considered STD, LTD, sick days, etc.) and found that patients with bipolar disorder cost $6,836/year more in health benefit claims than those without.

The next section of this report will look at the incidence and impact of co-morbid conditions with depression.

TABLE 1: General drug plan and Mental Illness measures, including percentage of total and Year-Over-Year (YOY) change values, for ALL PLAN MEMBERS.

METRIC	2004	2005	Year-Over-Year Change (%)
Total Amount Paid ($), All Claimants, All Drugs:	$57,313,429.20	$59,702,901.34	4.2%
Amount Paid ($), All Claimants, Mental Illness Drugs:	$6,736,026.72	$6,782,987.73	0.7%
Amount Paid, All Claimants, Mental Illness Drugs as a Percentage (%) of Total Amount Paid ($), All Claimants, All Drugs:	11.8%	11.4%	
Total Number of Claims Paid, All Claimants, All Drugs:	1,248,970	1,282,043	2.7%
Number of Claims Paid, All Claimants, Mental Illness Drugs: *	150,014.00	155,266.75	3.5%
Number of Claims Paid, All Claimants, Mental Illness Drugs as a Percentage (%) of Total Number of Claims Paid, All Claimants, All Drugs:	12.0%	12.1%	
Total Number of Claimants, All Drugs:	117,769	121,495	3.2%
Number of Claimants, Mental Illness Drugs: *	22,124.00	22,672.25	2.5%
Number of Claimants, Mental Illness Drugs as a Percentage (%) of Total Number of Claimants, All Drugs:	18.8%	18.7%	

* Fractions of claims and claimants are due to the allocations of certain medications to more than one therapeutic System in Cubic Health's *SFC Therapeutic Classification System*™, with weighting factors based on prescribing practices.

TABLE 2: Mental Illness within the top five therapeutic Systems by AMOUNT PAID, for ALL PLAN MEMBERS.

RANK 2004	RANK 2005	SFC Therapeutic System*	Amount Paid ($), 2004	% of Total Amount Paid, 2004	Amount Paid ($), 2005	% of Total Amount Paid, 2005	Year-Over-Year Change (%)
1	1	Cardiovascular	$13,798,581.73	24.1%	$14,393,341.31	24.1%	4.3%
2	**2**	**Mental Illness**	**$6,736,026.72**	**11.8%**	**$6,782,897.73**	**11.4%**	**0.7%**
3	3	Stomach/Bowel	$5,793,809.09	10.1%	$6,040,758.64	10.1%	4.3%
4	4	Muscle/Bone	$5,097,263.07	8.9%	$4,676,575.01	7.8%	-8.3%
5	5	Infection	$4,238,983.66	7.4%	$4,551,816.98	7.6%	7.4%

* Utilizing Cubic Health's *SFC Therapeutic Classification System* ™

TABLE 3: Mental Illness within the top five therapeutic Systems by NUMBER OF CLAIMS PAID, for ALL PLAN MEMBERS.

RANK 2004	RANK 2005	SFC Therapeutic System*	Number of Claims, 2004**	% of Total Number of Claims, 2004	Number of Claims, 2005**	% of Total Number of Claims, 2005	Year-Over-Year Change (%)
1	1	Cardiovascular	275,377.50	22.0%	291,217.00	22.7%	5.8%
2	**2**	**Mental Illness**	**150,014.00**	**12.0%**	**155,266.75**	**12.1%**	**3.5%**
4	3	Infection	107,675.25	8.6%	110,478.50	8.6%	2.6%
3	4	Muscle/Bone	108,557.71	8.7%	101,458.37	7.9%	-6.5%
5	5	Hormones	101,565.00	8.1%	99,094.00	7.7%	-2.4%

* Utilizing Cubic Health's *SFC Therapeutic Classification System* ™
** Fractions of claims are due to the allocations of certain medications to more than one SFC Therapeutic System with weighting factors based on prescribing practices.

TABLE 4: Mental Illness within the top five therapeutic Systems by NUMBER OF CLAIMANTS, for ALL PLAN MEMBERS.

RANK 2004	RANK 2005	SFC Therapeutic System*	Number of Claimants, 2004**	% of Total Number of Claimants, 2004	Number of Claimants, 2005**	% of Total Number of Claimants, 2005	Year-Over-Year Change (%)
1	1	Infection	54,694.25	46.4%	57,216.00	47.1%	4.6%
3	2	Cardiovascular	29,554.00	25.1%	30,232.75	24.9%	2.3%
4	3	Skin	28,947.75	24.6%	29,165.75	24.0%	0.8%
2	4	Muscle/Bone	31,860.74	27.1%	28,734.66	23.7%	-9.8%
5	**5**	**Mental Illness**	**22,124.00**	**18.8%**	**22,672.25**	**18.7%**	**2.5%**

* Utilizing Cubic Health's *SFC Therapeutic Classification System* ™
** Fractions of claimants are due to the allocations of certain medications to more than one SFC Therapeutic System with weighting factors based on prescribing practices.

TABLE 5: Breakdown of therapeutic Functions within Mental Illness by AMOUNT PAID, for ALL PLAN MEMBERS.

RANK 2004	RANK 2005	SFC Therapeutic Function*	Amount Paid ($), 2004	% of Total Amount Paid, 2004	Amount Paid ($), 2005	% of Total Amount Paid, 2005	Year-Over-Year Change (%)
1	1	Depression	$4,694,001.48	8.2%	$4,450,510.55	7.5%	-5.2%
2	2	Psychoses	$733,276.12	1.3%	$824,327.47	1.4%	12.4%
3	3	Sleep Disorder	$552,053.82	1.0%	$567,885.06	1.0%	2.9%
4	4	Attention Deficit Hyperactivity Disorder (ADHD)	$365,751.98	0.6%	$538,397.79	0.9%	47.2%
5	5	Anxiety Disorder	$275,864.19	0.5%	$266,322.67	0.4%	-3.5%
6	6	Alzheimer's Disease	$115,079.13	0.2%	$135,454.19	0.2%	17.7%
		TOTALS, MENTAL ILLNESS:	$6,736,026.72	11.8%	$6,782,897.73	11.4%	0.7%

* Utilizing Cubic Health's *SFC Therapeutic Classification System* ™

TABLE 6: Breakdown of therapeutic Functions within Mental Illness by NUMBER OF CLAIMS PAID, for ALL PLAN MEMBERS.

RANK 2004	RANK 2005	SFC Therapeutic Function*	Number of Claims, 2004**	% of Total Number of Claims, 2004	Number of Claims, 2005**	% of Total Number of Claims, 2005	Year-Over-Year Change (%)
1	1	Depression	79,088.25	6.3%	80,788.75	6.3%	2.2%
2	2	Sleep Disorder	28,896.00	2.3%	29,625.50	2.3%	2.5%
3	3	Anxiety Disorder	21,290.75	1.7%	21,268.50	1.7%	-0.1%
4	4	Psychoses	11,635.00	0.9%	13,050.00	1.0%	12.2%
5	5	Attention Deficit Hyperactivity Disorder (ADHD)	6,259.00	0.5%	6,874.00	0.5%	9.8%
6	6	Alzheimer's Disease	2,845.00	0.2%	3,660.00	0.3%	28.6%
		TOTALS, MENTAL ILLNESS:	150,014.00	12.0%	155,266.75	12.1%	3.5%

* Utilizing Cubic Health's *SFC Therapeutic Classification System* ™
** Fractions of claims are due to the allocations of certain medications to more than one SFC Therapeutic Function with weighting factors based on prescribing practices.

TABLE 7: Breakdown of therapeutic Functions within Mental Illness by NUMBER OF CLAIMANTS, for ALL PLAN MEMBERS.

RANK 2004	RANK 2005	SFC Therapeutic Function*	Number of Claimants, 2004**	% of Total Number of Claimants, 2004	Number of Claimants, 2005**	% of Total Number of Claimants, 2005	Year-Over-Year Change (%)
1	1	Depression	14,129.25	12.0%	14,487.00	11.9%	2.5%
2	2	Sleep Disorder	7,523.75	6.4%	7,665.75	6.3%	1.9%
3	3	Anxiety Disorder	5,382.25	4.6%	5,355.25	4.4%	-0.5%
4	4	Psychoses	1,738.75	1.5%	1,873.50	1.5%	7.7%
5	5	Attention Deficit Hyperactivity Disorder (ADHD)	1,306.00	1.1%	1,451.00	1.2%	11.1%
6	6	Alzheimer's Disease	275.00	0.2%	227.00	0.2%	-17.5%

* Utilizing Cubic Health's *SFC Therapeutic Classification System* ™
** Fractions of claims are due to the allocations of certain medications to more than one SFC Therapeutic Function with weighting factors based on prescribing practices.

TABLE 8: Drug plan utilization comparison between those claimants with Depression versus those without Depression, ALL PLAN MEMBERS.

METRIC	ALL CLAIMANTS 2004	ALL CLAIMANTS 2005	ALL CLAIMANTS YOY Change (%)	CLAIMANTS WITH DEPRESSION * 2004	CLAIMANTS WITH DEPRESSION * 2005	CLAIMANTS WITH DEPRESSION * YOY Change (%)	CLAIMANTS WITHOUT DEPRESSION ** 2004	CLAIMANTS WITHOUT DEPRESSION ** 2005	CLAIMANTS WITHOUT DEPRESSION ** YOY Change (%)
Total Amount Paid ($):	$57,313,429.20	$59,702,901.34	4.2%	**$17,492,163.35**	**$18,236,645.06**	**4.3%**	$39,821,265.85	$41,466,256.28	4.1%
Amount Paid as % of Total Amount Paid:	100.0%	100.0%		**30.5%**	**30.5%**		69.5%	69.5%	
Total Number of Claims Paid: ***	1,248,970	1,282,043	2.7%	**367,439**	**387,575**	**5.5%**	881,531	894,468	1.5%
Number of Claims as % of Total Number of Claims Paid:	100.0%	100.0%		**29.4%**	**30.2%**		70.6%	69.8%	
Total Number of Claimants: ***	117,769	121,495	3.2%	**14,129.25**	**14,487.00**	**2.5%**	103,639.75	107,008.00	3.2%
Number of Claimants as % of Total Number of Claimants:	100.0%	100.0%		**12.0%**	**11.9%**		88.0%	88.1%	
Amount Paid ($) / Claimant / Year:	$486.66	$491.40	1.0%	**$1,238.01**	**$1,258.83**	**1.7%**	$384.23	$387.51	0.9%
Number of Claims Paid / Claimant / Year:	10.6	10.6	0.0%	**26.0**	**26.8**	**3.1%**	8.5	8.4	-1.2%

* Defined as any claimants with at least one net paid claim for an antidepressant medication during the one-year reporting period.

** Defined as all claimants who did not have one net paid claim for an antidepressant medication throughout the one-year reporting period.

*** Fractions of claims and claimants are due to the allocations of certain medications to more than one SFC System and Function, with weighting factors based on prescribing practices.

TABLE 9: General drug plan and Mental Illness measures, including percentage of total and Year-Over-Year (YOY) change values, for EMPLOYEES ONLY.

METRIC	2004	2005	Year-Over-Year Change (%)
Total Amount Paid ($), All Employee Claimants, All Drugs:	$33,914,645.83	$35,515,245.89	4.7%
Amount Paid ($), All Employee Claimants, Mental Illness Drugs:	$3,589,048.60	$3,607,952.30	0.5%
Amount Paid, All Employee Claimants, Mental Illness Drugs as a Percentage (%) of Total Amount Paid ($), All Employee Claimants, All Drugs:	10.6%	10.2%	
Total Number of Claims Paid, All Employee Claimants, All Drugs:	738,609	769,354	4.2%
Number of Claims Paid, All Employee Claimants, Mental Illness Drugs: *	86,457.75	91,275.50	5.6%
Number of Claims Paid, All Employee Claimants, Mental Illness Drugs as a Percentage (%) of Total Number of Claims Paid, All Claimants, All Drugs:	11.7%	11.9%	
Total Number of Employee Claimants, All Drugs:	55,802	56,861	1.9%
Number of Employee Claimants, Mental Illness Drugs:*	11,953.00	12,128.25	1.5%
Number of Employee Claimants, Mental Illness Drugs as a Percentage (%) of Total Number of Employee Claimants, All Drugs:	21.4%	21.3%	

* Fractions of claims and claimants are due to the allocations of certain medications to more than one therapeutic System in Cubic Health's *SFC Therapeutic Classification System*™, with weighting factors based on prescribing practices.

TABLE 10: Mental Illness within the top five therapeutic Systems by AMOUNT PAID, for EMPLOYEES ONLY.

RANK 2004	RANK 2005	SFC Therapeutic System*	Amount Paid ($), Employees, 2004	% of Total Amount Paid, Employees, 2004	Amount Paid ($), Employees, 2005	% of Total Amount Paid, Empoyees, 2005	Year-Over-Year Change (%)
1	1	Cardiovascular	$9,567,460.43	28.2%	$9,989,595.36	28.1%	4.4%
3	2	Stomach/Bowel	$3,516,444.01	10.4%	$3,705,356.60	10.4%	5.4%
2	**3**	**Mental Illness**	**$3,589,048.60**	**10.6%**	**$3,607,952.30**	**10.2%**	**0.5%**
4	4	Muscle/Bone	$2,950,692.20	8.7%	$2,720,238.42	7.7%	-7.8%
5	5	Infection	$2,460,259.22	7.3%	$2,708,229.17	7.6%	10.1%

* Utilizing Cubic Health's *SFC Therapeutic Classification System* ™

TABLE 11: Mental Illness within the top five therapeutic Systems by NUMBER OF CLAIMS PAID, for EMPLOYEES ONLY.

RANK 2004	RANK 2005	SFC Therapeutic System*	Number of Claims, Employees, 2004**	% of Total Number of Claims, Employees, 2004	Number of Claims, Employees, 2005**	% of Total Number of Claims, Employees, 2005	Year-Over-Year Change (%)
1	1	Cardiovascular	193,561.50	26.2%	205,825.00	26.8%	6.3%
2	**2**	**Mental Illness**	**86,457.75**	**11.7%**	**91,275.50**	**11.9%**	**5.6%**
3	3	Muscle/Bone	68,114.98	9.2%	64,985.06	8.4%	-4.6%
4	4	Stomach/Bowel	54,878.75	7.4%	58,698.50	7.6%	7.0%
5	5	Hormones	51,682.00	7.0%	50,620.00	6.6%	-2.1%

* Utilizing Cubic Health's *SFC Therapeutic Classification System* ™
** Fractions of claims are due to the allocations of certain medications to more than one SFC Therapeutic System with weighting factors based on prescribing practices.

TABLE 12: Mental Illness within the top six therapeutic Systems by NUMBER OF CLAIMANTS, for EMPLOYEES ONLY.

RANK 2004	RANK 2005	SFC Therapeutic System*	Number of Employee Claimants, 2004**	% of Total Number of Employee Claimants, 2004	Number of Employee Claimants, 2005**	% of Total Number of Employee Claimants, 2005	Year-Over-Year Change (%)
1	1	Infection	23,121.00	41.4%	24,555.00	43.2%	6.2%
2	2	Cardiovascular	19,745.75	35.4%	19,910.50	35.0%	0.8%
3	3	Muscle/Bone	18,840.00	33.8%	16,842.00	29.6%	-10.6%
4	4	Skin	12,798.25	22.9%	12,947.25	22.8%	1.2%
5	5	Stomach/Bowel	12,356.50	22.1%	12,493.25	22.0%	1.1%
6	**6**	**Mental Illness**	**11,953.00**	**21.4%**	**12,128.25**	**21.3%**	**1.5%**

* Utilizing Cubic Health's *SFC Therapeutic Classification System* ™
** Fractions of claimants are due to the allocations of certain medications to more than one SFC Therapeutic System with weighting factors based on prescribing practices.

TABLE 13: Breakdown of therapeutic Functions within Mental Illness by AMOUNT PAID, for EMPLOYEES ONLY.

RANK 2004	RANK 2005	SFC Therapeutic Function*	Amount Paid ($), Employees, 2004	% of Total Amount Paid, Employees, 2004	Amount Paid ($), Employees, 2005	% of Total Amount Paid, Employees, 2005	Year-Over-Year Change (%)
1	1	Depression	$2,579,107.92	7.6%	$2,491,255.02	7.0%	-3.4%
2	2	Psychoses	$404,263.29	1.2%	$456,921.71	1.3%	13.0%
3	3	Sleep Disorder	$327,470.13	1.0%	$350,255.79	1.0%	7.0%
4	4	Anxiety Disorder	$160,452.13	0.5%	$157,457.01	0.4%	-1.9%
5	5	Alzheimer's Disease	$96,025.18	0.3%	$108,322.23	0.3%	12.8%
6	6	Attention Deficit Hyperactivity Disorder (ADHD)	$21,729.95	0.1%	$43,730.54	0.1%	101.2%
		TOTALS, MENTAL ILLNESS:	$3,589,048.60	10.6%	$3,607,952.30	10.2%	0.5%

* Utilizing Cubic Health's *SFC Therapeutic Classification System*™

TABLE 14: Breakdown of therapeutic Functions within Mental Illness by NUMBER OF CLAIMS PAID, for EMPLOYEES ONLY.

RANK 2004	RANK 2005	SFC Therapeutic Function*	Number of Claims, Employees, 2004**	% of Total Number of Claims, Employees, 2004	Number of Claims, Employees, 2005**	% of Total Number of Claims, Employees, 2005	Year-Over-Year Change (%)
1	1	Depression	45,509.50	6.2%	47,507.75	6.2%	4.4%
2	2	Sleep Disorder	17,946.00	2.4%	18,698.75	2.4%	4.2%
3	3	Anxiety Disorder	12,900.75	1.7%	13,130.75	1.7%	1.8%
4	4	Psychoses	6,942.50	0.9%	7,847.25	1.0%	13.0%
5	5	Alzheimer's Disease	2,694.00	0.4%	3,490.00	0.5%	29.5%
6	6	Attention Deficit Hyperactivity Disorder (ADHD)	465.00	0.1%	601.00	0.1%	29.2%
		TOTALS, MENTAL ILLNESS:	86,457.75	11.7%	91,275.50	11.9%	5.6%

* Utilizing Cubic Health's *SFC Therapeutic Classification System*™
** Fractions of claims are due to the allocations of certain medications to more than one SFC Therapeutic Function with weighting factors based on prescribing practices.

TABLE 15: Breakdown of therapeutic Functions within Mental Illness by NUMBER OF CLAIMANTS, for EMPLOYEES ONLY.

RANK 2004	RANK 2005	SFC Therapeutic Function*	Number of Employee Claimants, 2004**	% of Total Number of Employee Claimants, 2004	Number of Employee Claimants, 2005**	% of Total Number of Employee Claimants, 2005	Year-Over-Year Change (%)
1	1	Depression	7,655.25	13.7%	7,866.50	13.8%	2.8%
2	2	Sleep Disorder	4,554.25	8.2%	4,561.25	8.0%	0.2%
3	3	Anxiety Disorder	3,207.75	5.7%	3,118.25	5.5%	-2.8%
4	4	Psychoses	967.00	1.7%	1,018.50	1.8%	5.3%
5	5	Alzheimer's Disease	244.00	0.4%	203.00	0.4%	-16.8%
6	6	Attention Deficit Hyperactivity Disorder (ADHD)	111.00	0.2%	142.00	0.2%	27.9%

* Utilizing Cubic Health's *SFC Therapeutic Classification System*™
** Fractions of claims are due to the allocations of certain medications to more than one SFC Therapeutic Function with weighting factors based on prescribing practices.

TABLE 16: Drug plan utilization comparison between those claimants with Depression versus those without Depression, for EMPLOYEES ONLY.

METRIC	ALL EMPLOYEE CLAIMANTS 2004	2005	YOY Change (%)	EMPLOYEE CLAIMANTS WITH DEPRESSION * 2004	2005	YOY Change (%)	EMPLOYEE CLAIMANTS WITHOUT DEPRESSION ** 2004	2005	YOY Change (%)
Total Amount Paid ($):	$33,914,645.83	$35,515,245.89	4.7%	**$9,686,468.96**	**$10,313,206.70**	**6.5%**	$24,228,176.87	$25,202,039.19	4.0%
Amount Paid as % of Total Amount Paid:	100.0%	100.0%		**28.6%**	**29.0%**		71.4%	71.0%	
Total Number of Claims Paid: ***	738,609	769,354	4.2%	**220,417**	**239,967**	**8.9%**	518,192	529,387	2.2%
Number of Claims as % of Total Number of Claims Paid:	100.0%	100.0%		**29.8%**	**31.2%**		70.2%	68.8%	
Total Number of Claimants: ***	55,802	56,861	1.9%	**7,655.25**	**7,866.50**	**2.8%**	48,146.75	48,994.50	1.8%
Number of Claimants as % of Total Number of Claimants:	100.0%	100.0%		**13.7%**	**13.8%**		86.3%	86.2%	
Amount Paid / Employee Claimant / Year:	$607.77	$624.60	2.8%	**$1,265.34**	**$1,311.03**	**3.6%**	$503.22	$514.39	2.2%
Number of Claims Paid / Employee Claimant / Year:	13.2	13.5	2.3%	**28.8**	**30.5**	**5.9%**	10.8	10.8	0.0%

* Defined as any Employee claimants with at least one net paid claim for an antidepressant medication during the one-year reporting period.

** Defined as all Employee claimants who did not have one net paid claim for an antidepressant medication throughout the one-year reporting period.

*** Fractions of claims and claimants are due to the allocations of certain medications to more than one SFC System and Function, with weighting factors based on prescribing practices.

CO-MORBIDITIES WITH DEPRESSION ANALYSIS

INTRODUCTION

In investigating the impact of mental illness in the workplace, it is important to look beyond its direct costs and consider the larger burden of mental illness within the context of a given group. Given the dominance of depression as the most common and the most expensive type of mental illness in the workplace, this section of the study sought to determine the most prominent co-morbidities of depressed employees.

Co-morbidity is defined as the presence of one or more disorders (or diseases) in addition to a primary disorder of disease. In order to analyze co-morbidity with depression using drug claims data, this investigation isolated individuals who made claims for both antidepressant therapies and drugs used to treat other conditions. The intent of this section was not to determine a cause and effect (i.e. that depression causes high blood pressure or vice versa) but rather to better understand what other conditions are prevalent in this population of employees suffering from depression.

In the previous section, the data demonstrated that employee claimants with depression spend two and one-half times more on prescription medications than non-depressed plan employee claimants, and make three times as many claims for all drug therapies. This section seeks to understand where that spending and utilization takes place, and where the opportunities exist to focus health and wellness initiatives that may have the highest return on investment (ROI).

Since the purpose of this section is to understand the implications for the plan sponsor, and what a given company might be facing on a daily basis in the workplace, this section of the report considers only the Employees Only subgroup. Earlier in this report, it was determined that nearly 14% of all employee claimants in each year made at least one claim for an antidepressant. If all disease states were completely independent of one another, one would therefore expect this subgroup of employees with depression to make up only 14% of all claimants within other key diseases. As the data shows, however, that is not the case across a number of important disease states. By identifying those situations where a disproportionately high percentage of employees with depression make up the population of another disease state (i.e. greater than 14% of all claimants within that disease state), one can make observations of potential co-morbidities with depression.

This section further examines the impact of co-morbidities with depression by assessing the patterns of spending and utilization within the top co-morbid disease states to better quantify the overall burden of illness (TABLES 18 and 19).

SUMMARY OF KEY FINDINGS & DISCUSSION

In considering TABLES 17A and 17B, the most common conditions claimed for by the depression claimants in the plan population are:

- Infection, General Bacterial
- Inflammation, Muscle/Bone
- Blood Pressure
- Stomach Hyperacidity
- Mild-Moderate Pain
- Sleep Disorder
- Elevated Cholesterol
- Anxiety Disorder
- Neurological Pain
- Asthma/COPD

Each of these conditions had claimant rate among those employee claimants with depression that was above what would be expected based on their percentage of the overall population. Therefore, there is a signal of co-morbidity with depression, to a varying degree, with each condition. We will discuss these relationships further, grouping some of the disease states as appropriate.

INFECTION (GENERAL BACTERIAL)

In both 2004 and 2005, Infection (General Bacterial) had the highest number of employee claimants with depression compared to any other condition. However, this therapeutic area also had the lowest percentage of actual claimants above expected claimants at 14.8% and 11.7% in the respective periods. This indicates that, although a high claiming pattern exists among employee claimants with depression, it was not substantially above what was expected, and that there was only a weak association between these two conditions despite the relatively high absolute number of depressed claimants within Infection (General Bacterial) function. These findings make sense, as General Bacterial Infections are very often the most prevalent condition within any claimant group in a plan. Young or old, male or female, plan members with existing illnesses or those otherwise in good health, everyone is susceptible to bacterial injections.

PAIN CONDITIONS

The therapeutic functions of Inflammation Muscle/Bone, Mild-Moderate Pain and Neurological Pain all had a number of employee claimants with depression well above expected. The greater than 500% difference above expected in Neurological Pain was, by far, the highest percentage difference of all top co-morbid conditions. It is important to note that this value is artificially elevated due to the use of certain antidepressants (specifically tri-cyclic antidepressants) as first-line agents in the treatment of Neurological Pain. Therefore, any claimant for these agents in the co-morbidity breakdowns shows up both in the Depression and Neurological Pain therapeutic functions. At the same time, a review of the literature shows a co-morbidity relationship of depression with fibromyalgia.[4,5] In this single case, therefore, the impact assessments by amount paid (TABLES 18A and 18B) and by number of claims (TABLES 19A and 19B) likely give a more accurate representation of

co-morbidity with the weighted allocation of these therapies into different therapeutic functions. Employee claimants with depression comprise about 65% of the cost and 83% of the number of claims within Neurological Pain).

With respect to the other two pain functions, the percentage above expected ranges from 30-50%. The association between depression and a broad range of pain-related conditions including chronic fatigue syndrome, lower back pain, chronic tension headache and temporomandibular joint (TMJ) disorders has also been recognized.[5] The agents in the Inflammation (Muscle/Bone) and Mild-Moderate Pain functions would feature prominently in all of the aforementioned conditions.

CARDIOVASCULAR CONDITIONS

Blood Pressure and Elevated Cholesterol are both associated with Depression in 20-25% more claimants than would be expected. One may not routinely consider these conditions to be related; however, a meta-analysis of 22 independent studies showed a strong positive relation between cardiovascular disease and depression.[6] Some factors that have linked depression with the subsequent onset of cardiovascular disease include the higher rates of obesity and the higher rates of smoking in depressed patients.[6] Both of these are major risk factors for heart attack and stroke. However, the relationship has also been found in the opposite direction (i.e. cardiovascular disease leading to depression) with increased depression rates in patients suffering a heart attack due to the mental impact of disease burden.[6] Interestingly, the co-morbid associations found in our analysis did not translate into as substantial an impact on the amount paid or the number of claims as might be expected from the employee claimants with depression.

OTHER MENTAL ILLNESS CONDITIONS

As might be anticipated, clear co-morbidities in this analysis were seen between Depression and the other mental illnesses of Sleep Disorder and Anxiety Disorder. Incidence rates of both of these conditions among employee claimants with depression are around 200% above expected, but unlike the situation with Neurological Pain, it is not generally due to cross-utilization of antidepressants. The impact these co-morbid conditions had on amount paid and number of claims is notable. As is evident in TABLES 18A and 18B, over half of the total spend on Sleep Disorders and Anxiety Disorders was by the 14% of the employee claimant population with Depression claims. A similar impact was found in number of claims as shown in TABLES 19A and 19B.

STOMACH HYPERACIDITY

Conditions such as reflux esophagitis (heartburn), stomach/bowel ulcers and dyspepsia are examples of diseases encompassed by the Stomach Hyperacidity function. Drugs commonly used to treat these conditions include Losec®, Pariet®, Pantoloc® and

Nexium®. The fairly substantial association found with the employee claimants with Depression and this therapeutic function – over 70% higher than expected – was unexpected. A literature review showed one 10 year-old study that showed a co-morbidity relationship between peptic ulcer disease and depression.[7] However, with peptic ulcer disease representing only one component among those claimants receiving drugs like Losec®, these findings suggest that there may be some additional relationship with depression and heartburn and/or dyspepsia. The amount spent by the Depression claimants in this area was almost $800,000 or 26% of the total amount paid by all employee claimants.

ASTHMA/COPD

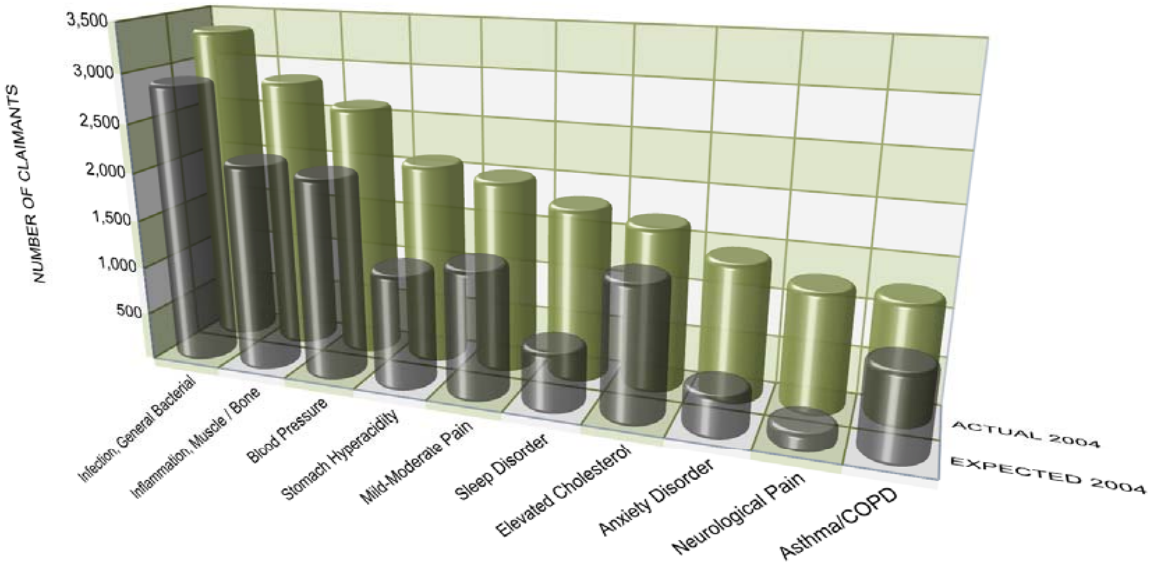
The final disease area with disproportionate claiming among employee claimants with Depression is Asthma/COPD. This is another condition that has an established co-morbidity in the literature both in adults[8] and in children.[9] It is suggested that depression results from disease-related reductions in quality of life that patients suffer.[9] The implication of this suggestion is that a depression comorbidity could be a concern in any chronic condition which impacts quality of life. In fact, such broad concerns have been raised in a recent World Health Survey.[1]

SUMMARY

As is evident from the analysis preformed by Cubic Health and the studies that have been cited from the medical literature, the impact of depression on related co-morbidities is significant on those suffering from mental illness and on plan sponsors that support them. In a recent review article on the impact of mental illness published in the Lancet, the authors make a very astute assertion regarding this issue:

"The burden of mental disorders is likely to have been underestimated because of inadequate appreciation of the connectedness between mental illness and other health conditions. Because these interactions are protean, there ***can be no health without mental health.****"* [1]

TABLE 17A: Top 10 co-morbid conditions breakdown for claimants with Depression, by NUMBER OF CLAIMANTS, for EMPLOYEES ONLY, 2004. Employee claimants with Depression are defined as any Employee claimants with at least one net paid claim for an antidepressant medication during the one-year reporting period.



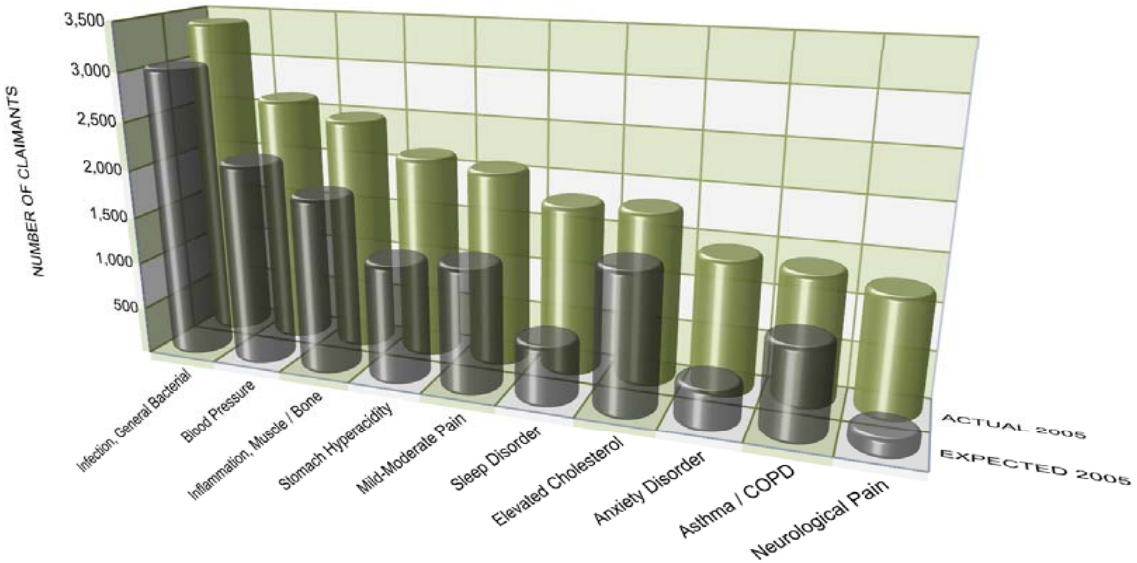
RANK 2004	SFC THERAPEUTIC FUNCTION *	ACTUAL NUMBER OF CLAIMANTS AMONG THOSE EMPLOYEE CLAIMANTS WITH DEPRESSION, 2004 **	EXPECTED NUMBER OF CLAIMANTS AMONG THOSE EMPLOYEE CLAIMANTS WITH DEPRESSION, 2004 ***	PERCENTAGE DIFFERENCE BETWEEN ACTUAL AND EXPECTED NUMBER OF CLAIMANTS, 2004
1	Infection, General Bacterial	3,327.00	2,898.85	14.8%
2	Inflammation, Muscle / Bone	2,843.50	2,154.30	32.0%
3	Blood Pressure	2,621.00	2,091.20	25.3%
4	Stomach Hyperacidity	2,097.00	1,205.05	74.0%
5	Mild-Moderate Pain	2,002.00	1,343.29	49.0%
6	Sleep Disorder	1,795.75	623.93	187.8%
7	Elevated Cholesterol	1,688.00	1,411.51	19.6%
8	Anxiety Disorder	1,425.50	439.46	224.4%
9	Neurological Pain	1,244.50	202.35	515.0%
10	Asthma/COPD	1,236.00	904.26	36.7%

* Utilizing Cubic Health's *SFC Therapeutic Classification System* ™

** Fractions of claimants are due to the allocations of certain medications to more than one SFC System and Function, with weighting factors based on prescribing practices.

*** Based on Employee Claimants with Depression representing 13.7% of all Employee Claimants in 2004.

TABLE 17B: Top 10 co-morbid conditions breakdown for claimants with Depression, by NUMBER OF CLAIMANTS, for EMPLOYEES ONLY, 2005. Employee claimants with Depression are defined as any Employee claimants with at least one net paid claim for an antidepressant medication during the one-year reporting period.



RANK 2005	SFC THERAPEUTIC FUNCTION *	ACTUAL NUMBER OF CLAIMANTS AMONG THOSE EMPLOYEE CLAIMANTS WITH DEPRESSION, 2005 **	EXPECTED NUMBER OF CLAIMANTS AMONG THOSE EMPLOYEE CLAIMANTS WITH DEPRESSION, 2005 ***	PERCENTAGE DIFFERENCE BETWEEN ACTUAL AND EXPECTED NUMBER OF CLAIMANTS, 2005
1	Infection, General Bacterial	3,405.00	3,048.04	11.7%
2	Blood Pressure	2,639.00	2,130.24	23.9%
3	Inflammation, Muscle / Bone	2,477.83	1,857.34	33.4%
4	Stomach Hyperacidity	2,145.00	1,253.87	71.1%
5	Mild-Moderate Pain	2,067.00	1,317.90	56.8%
6	Sleep Disorder	1,792.75	629.45	184.8%
7	Elevated Cholesterol	1,810.00	1,484.05	22.0%
8	Anxiety Disorder	1,417.50	430.32	229.4%
9	Asthma / COPD	1,362.83	967.61	40.8%
10	Neurological Pain	1,248.50	206.79	503.7%

* Utilizing Cubic Health's *SFC Therapeutic Classification System* ™

** Fractions of claimants are due to the allocations of certain medications to more than one SFC System and Function, with weighting factors based on prescribing practices.

*** Based on Employee Claimants with Depression representing 13.8% of all Employee Claimants in 2005.

TABLE 18A: Impact of Employee claimants with Depression within the top 10 co-morbid conditions, by AMOUNT PAID, 2004. Employee claimants with Depression are defined as any Employee claimants with at least one net paid claim for an antidepressant medication during the one-year reporting period.

RANK 2004	SFC THERAPEUTIC FUNCTION *	AMOUNT PAID ($) FOR EMPLOYEE CLAIMANTS WITH DEPRESSION, 2004 **	TOTAL AMOUNT PAID ($) FOR ALL EMPLOYEE CLAIMANTS, 2004	AMOUNT PAID FOR EMPLOYEE CLAIMANTS WITH DEPRESSION AS A % OF TOTAL AMOUNT PAID FOR ALL EMPLOYEE CLAIMANTS, 2004
1	Infection, General Bacterial	$203,863.07	$1,112,871.11	18.3%
2	Inflammation, Muscle / Bone	$402,338.53	$1,733,951.94	23.2%
3	Blood Pressure	$745,291.02	$4,569,692.50	16.3%
4	Stomach Hyperacidity	$753,889.66	$2,853,846.57	26.4%
5	Mild-Moderate Pain	$80,648.31	$259,730.76	31.1%
6	Sleep Disorder	$163,184.06	$327,470.13	49.8%
7	Elevated Cholesterol	$712,236.72	$4,299,333.13	16.6%
8	Anxiety Disorder	$96,150.80	$160,452.13	59.9%
9	Neurological Pain	$140,844.71	$216,593.82	65.0%
10	Asthma/COPD	$242,600.14	$1,291,993.57	18.8%

* Utilizing Cubic Health's *SFC Therapeutic Classification System* ™

** Fractions of claimants are due to the allocations of certain medications to more than one SFC System and Function, with weighting factors based on prescribing practices.

TABLE 18B: Impact of Employee claimants with Depression within the top 10 co-morbid conditions, by AMOUNT PAID, 2005. Employee claimants with Depression are defined as any Employee claimants with at least one net paid claim for an antidepressant medication during the one-year reporting period.

RANK 2005	SFC THERAPEUTIC FUNCTION *	AMOUNT PAID ($), EMPLOYEE CLAIMANTS WITH DEPRESSION, 2005 **	TOTAL AMOUNT PAID ($) FOR ALL EMPLOYEE CLAIMANTS, 2005	AMOUNT PAID FOR EMPLOYEE CLAIMANTS WITH DEPRESSION AS A % OF TOTAL AMOUNT PAID FOR ALL EMPLOYEE CLAIMANTS, 2005
1	Infection, General Bacterial	$200,871.54	$1,112,044.58	18.1%
2	Blood Pressure	$805,681.98	$4,774,256.95	16.9%
3	Inflammation, Muscle / Bone	$277,803.73	$1,106,006.28	25.1%
4	Stomach Hyperacidity	$795,333.21	$2,986,749.31	26.6%
5	Mild-Moderate Pain	$100,284.46	$296,877.59	33.8%
6	Sleep Disorder	$176,069.65	$350,255.79	50.3%
7	Elevated Cholesterol	$763,949.41	$4,513,153.31	16.9%
8	Anxiety Disorder	$95,996.27	$157,457.01	61.0%
9	Asthma / COPD	$269,368.58	$1,362,514.21	19.8%
10	Neurological Pain	$154,802.10	$240,366.69	64.4%

* Utilizing Cubic Health's *SFC Therapeutic Classification System* ™

** Fractions of claimants are due to the allocations of certain medications to more than one SFC System and Function, with weighting factors based on prescribing practices.

TABLE 19A: Impact of Employee claimants with Depression within the top 10 co-morbid conditions, by NUMBER OF CLAIMS, 2004. Employee claimants with Depression are defined as any Employee claimants with at least one net paid claim for an antidepressant medication during the one-year reporting period.

RANK 2004	SFC THERAPEUTIC FUNCTION *	NUMBER OF CLAIMS FOR EMPLOYEE CLAIMANTS WITH DEPRESSION, 2004 **	TOTAL NUMBER OF CLAIMS FOR ALL EMPLOYEE CLAIMANTS, 2004	NUMBER OF CLAIMS FOR EMPLOYEE CLAIMANTS WITH DEPRESSION AS A % OF TOTAL NUMBER OF CLAIMS FOR ALL EMPLOYEE CLAIMANTS, 2004
1	Infection, General Bacterial	6,999.00	37,724.50	18.6%
2	Inflammation, Muscle / Bone	9,874.00	42,223.48	23.4%
3	Blood Pressure	23,476.00	116,455.25	20.2%
4	Stomach Hyperacidity	11,269.00	37,626.00	30.0%
5	Mild-Moderate Pain	6,354.00	21950.00	28.9%
6	Sleep Disorder	8,579.00	17,946.00	47.8%
7	Elevated Cholesterol	9,189.00	48,330.00	19.0%
8	Anxiety Disorder	7,130.50	12,900.75	55.3%
9	Neurological Pain	5266.50	6,262.25	84.1%
10	Asthma/COPD	5383.00	26,682.73	20.2%

* Utilizing Cubic Health's *SFC Therapeutic Classification System* ™

** Fractions of claimants are due to the allocations of certain medications to more than one SFC System and Function, with weighting factors based on prescribing practices.

TABLE 19B: Impact of Employee claimants with Depression within the top 10 co-morbid conditions, by NUMBER OF CLAIMS, 2005. Employee claimants with Depression are defined as any Employee claimants with at least one net paid claim for an antidepressant medication during the one-year reporting period.

RANK 2005	SFC THERAPEUTIC FUNCTION *	NUMBER OF CLAIMS FOR EMPLOYEE CLAIMANTS WITH DEPRESSION, 2005 **	TOTAL NUMBER OF CLAIMS FOR ALL EMPLOYEE CLAIMANTS, 2005	NUMBER OF CLAIMS FOR EMPLOYEE CLAIMANTS WITH DEPRESSION AS A % OF TOTAL NUMBER OF CLAIMS FOR ALL EMPLOYEE CLAIMANTS, 2005
1	Infection, General Bacterial	7,109.75	38,809.25	18.3%
2	Blood Pressure	26,040.00	123,228.75	21.1%
3	Inflammation, Muscle / Bone	8,580.82	34,707.81	24.7%
4	Stomach Hyperacidity	12,768.00	40,709.00	31.4%
5	Mild-Moderate Pain	6,986.00	21,947.00	31.8%
6	Sleep Disorder	9,148.75	18,698.75	48.9%
7	Elevated Cholesterol	10,529.00	52,553.00	20.0%
8	Anxiety Disorder	7,381.25	13,130.75	56.2%
9	Asthma / COPD	5913.07	27,156.31	21.8%
10	Neurological Pain	5482.00	6,587.25	83.2%

* Utilizing Cubic Health's *SFC Therapeutic Classification System* ™

** Fractions of claimants are due to the allocations of certain medications to more than one SFC System and Function, with weighting factors based on prescribing practices.

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