

# Annual Costs Associated with Patterns of Antidepressant Treatment among Employees

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## OBJECTIVES

- Describe the annual direct healthcare and indirect work-loss costs for employees treated with antidepressants and compare them across patients with different treatment response

## DATA

- Administrative claims data from 7 self-insured large companies, 1999-2003
  - Companies have nationwide operations
  - Broad array of industries and occupations (e.g., financial services, manufacturing, food and beverage)
- Data covers approximately 1.2 million beneficiaries
  - Employees, spouses, and children
  - Detailed administrative (e.g. medical, drug, disability) information
- Direct healthcare costs include medical and drug claims
  - Diagnosis codes (i.e., ICD-9)
  - Procedure codes (i.e., CPT)
  - Drug codes (i.e., NDC)
  - Provider payments
- Indirect work-loss costs include
  - Disability costs (i.e., employee benefits paid by employers for work days missed for medical reasons more than 6 days)
    - Employer payments for disability days used to calculate disability costs
  - Medically-related absenteeism (non-disability) of less than 6 days
    - For each day in which an employee had at least one medical claim:
      - A day of medically related work-loss was counted for a hospital day
      - Half a day of medically related work-loss was counted for other services
  - Imputed wages used to calculate medically related work-loss costs

## STUDY SAMPLE SELECTION CRITERIA

- Employees, age 18-64
- At least one diagnosis of major depressive disorder (MDD) [ICD-9 code: 296.2x, 296.3x]
- At least one prescription of selective serotonin reuptake inhibitors (SSRI) or serotonin-norepinephrine reuptake inhibitors (SNRI)
- Index Date defined as the date when patients receive their first SSRI or SNRI prescription (Index Drug) after a 6 month washout period of no SSRI nor SNRI
- Continuous eligibility for 6 month prior to the Index Date and 12 months thereafter

## TIME PERIOD FOR ANALYSIS IS 12 MONTHS AFTER THE INDEX DATE (FOLLOW-UP PERIOD)



## METHODOLOGY

### 1. CATEGORIZE PATIENTS' RESPONSE TO DRUGS INTO DIFFERENT TREATMENT PATTERN CATEGORIES

#### Identify Index Drug and Index Date

- Index Drug**
  - A patient's first SSRI or SNRI prescription following the 6 months washout period
- Index Date**
  - The date when patients receive their first SSRI or SNRI prescription (Index Drug) after a 6 months washout period of no SSRI nor SNRI

**Patients were assigned to only one of four mutually exclusive treatment pattern categories, based on their first treatment response in the 60 days following their Index Drug prescription:**

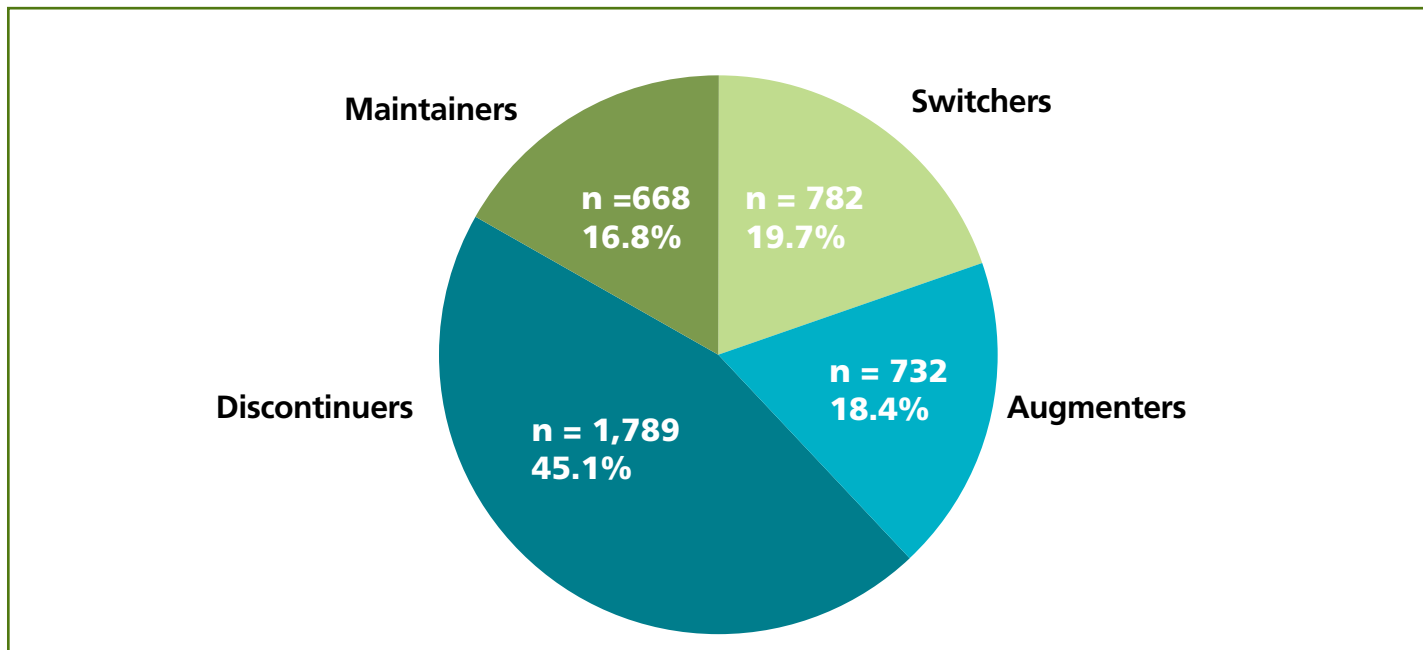
- Switchers**
  - A patient switches to an antidepressant other than the Index Drug
  - No refill of the Index Drug within 60 days of the end date of the current Index Drug prescription
- Augmenters**
  - Prescribed an additional antidepressant on or after the Index Date, in conjunction with continuing refills of the Index Drug
  - Refill of the Index Drug must occur from the start date of the new additional antidepressant to 60 days after the end date of the current Index Drug prescription
- Discontinuers**
  - Neither a switcher nor an augmenter
  - No refill of the Index Drug within 60 days of the end date of the current Index Drug prescription
- Maintainers**
  - Not a switcher, augmenter or discontinuer

### 2. ASSESS ANNUAL COSTS ACROSS TREATMENT PATTERN CATEGORIES

- Direct healthcare and indirect work-loss costs were calculated across treatment pattern categories during the 12 months follow-up period
- Direct healthcare costs include medical and drug costs
  - Medical costs further divided into hospital inpatient and outpatient costs
- Indirect work-loss costs include
  - Disability costs
  - Medically-related absenteeism (non-disability)
- Direct and indirect costs adjusted to 2003 dollars using medical and general Consumer Price Index (CPI), respectively
- Costs of patients across treatment pattern categories were compared using ANOVA analysis

## RESULTS

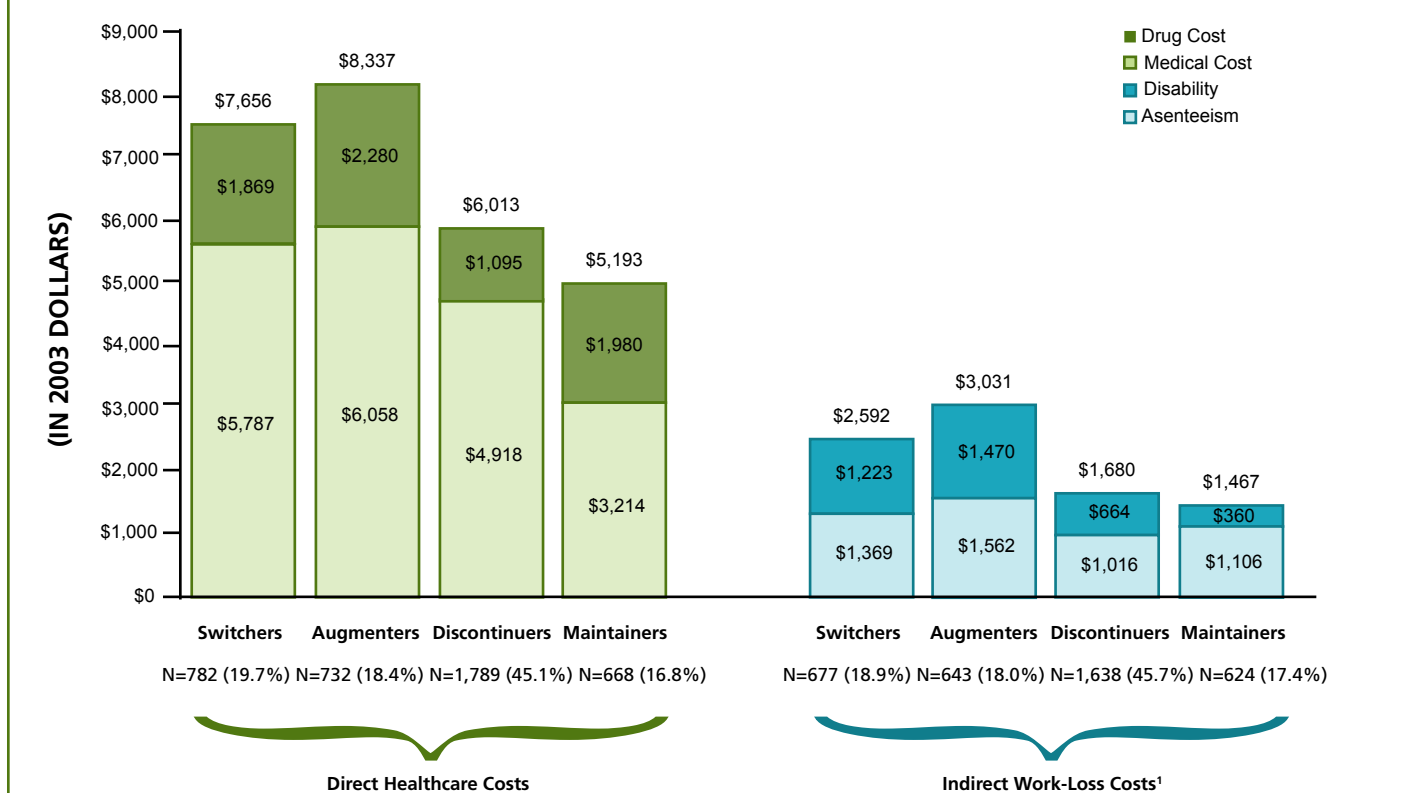
### DISTRIBUTION OF STUDY SAMPLE ACROSS TREATMENT PATTERN CATEGORIES (N=3,971)



## RESULTS

### DIRECT HEALTHCARE AND INDIRECT WORK-LOSS COSTS ACROSS TREATMENT PATTERN CATEGORIES IN THE 12 MONTHS FOLLOW-UP PERIOD (N=3,971)

- Switchers and augmenters had similar direct and indirect costs (all p>0.08), and were more expensive than discontinuers and maintainers (all p<0.001)
- Maintainers had higher drug costs but lower medical costs compared to discontinuers (all p<0.005)

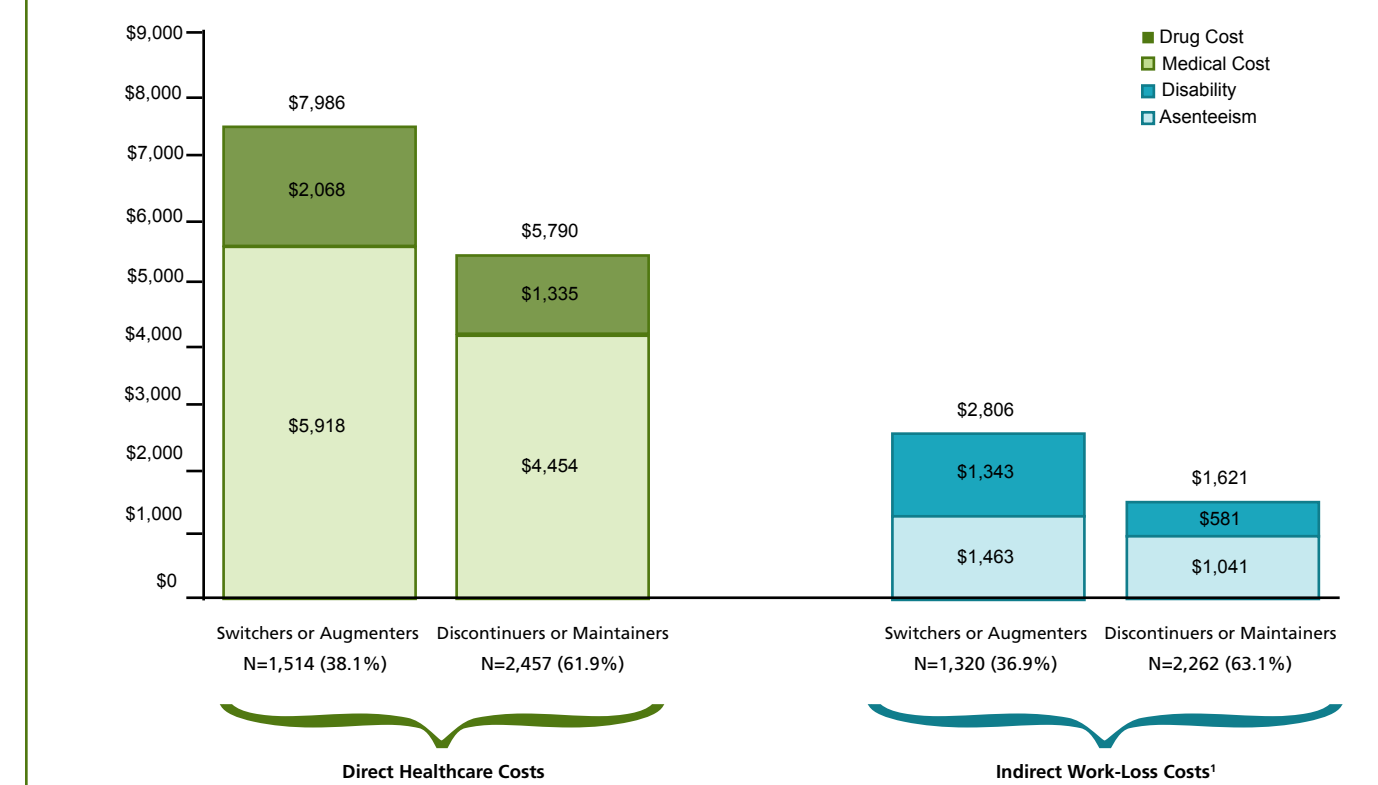


<sup>1</sup>The sample size for indirect cost calculation (N = 3,582) is smaller than the direct cost sample (N = 3,971) because some employees (N = 389) are missing disability data.

## RESULTS

### DIRECT HEALTHCARE AND INDIRECT WORK-LOSS COSTS ACROSS TREATMENT PATTERN CATEGORIES IN THE 12 MONTHS FOLLOW-UP PERIOD (N=3,971) PERIOD (N=3,971)

- Switchers or augmenters had higher direct costs than discontinuers or maintainers (p<0.001)
- Switchers or augmenters had higher indirect costs than discontinuers or maintainers (p<0.001)



<sup>1</sup>The sample size for indirect cost calculation (N = 3,582) is smaller than the direct cost sample (N = 3,971) because some employees (N = 389) are missing disability data.

## CONCLUSIONS

- First study (that we know of) that categorizes treatment patterns and quantifies direct and indirect costs
- Preliminary results indicate that:
  - Switchers and augmenters had similar direct and indirect costs and higher costs than maintainers and discontinuers
  - The average direct costs and average indirect costs for switchers or augmenters were higher than for discontinuers or maintainers
  - Maintainers had higher drug costs but lower medical costs compared with discontinuers
  - Analyses did not show any costs differences between patients taking SSRIs and SNRIs
  - Ongoing research is refining the methodology of the descriptive analyses and conducting a multivariate analysis to control for confounding factors