

**PAUL E. GREENBERG**  
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Paul E. Greenberg, Director of Analysis Group's Health Care Practice, specializes in health economics, both in health outcomes research and in complex business litigation. He consults to pharmaceutical, biotechnology, and medical device companies concerning the health economics profiles of specific diseases and medical products. Mr. Greenberg's health economics research has been published in leading medical, health economics, and managed care journals. He currently serves on the editorial boards of *PharmacoEconomics*, *Journal of Medical Economics*, and *Expert Opinion on Pharmacotherapy*. In addition, he has served on the editorial boards of *Law360's* Life Sciences and Health Care electronic newsletters as well as *Expert Review of Pharmacoeconomics & Outcomes Research*. He draws upon the methodological tools and data sources commonly used in health outcomes research to analyze problems that emerge in a litigation context.

Mr. Greenberg's experience in this area focuses on health care products and includes:

- Performing economic and statistical analyses as well as presenting findings to investigators from US Attorney's Offices and the Office of the Inspector General in numerous cases with allegations of off-label promotion, kickback, and/or pricing issues, in which violations of the Food, Drug and Cosmetic Act, False Claims Act, and/or Anti-Kickback statute have been alleged.
- Economic consulting support in connection with class certification, liability, and damages in cases involving allegations of product failure, product fraud, antitrust, and/or patent infringement.
- Providing strategic assistance to counsel at various key points in litigation, including pretrial discovery, settlement negotiations, and trial preparation.
- Cost-of-illness research relating to numerous physical and psychiatric disorders, as well as pharmaco-economic assessments of the cost-effectiveness of drugs based on data gathered in clinical trials and administrative claims files.

**EDUCATION**

- M.S. Applied Microeconomics and Finance, Sloan School of Management,  
Massachusetts Institute of Technology
- M.A. Economics, University of Western Ontario
- A.B. Economics, Vassar College

## SELECTED LITIGATION CASE ASSIGNMENTS

- **Government investigations concerning prescription drug and medical device marketing practices, including the following:**
  - District of Massachusetts
    - Impella heart pumps/Abiomed
    - Tracleer, Ventavis, Veletri, and Opsumit/Actelion
    - Xtandi/Astellas
    - Celexa, Lexapro, Levothroid/Forest Laboratories
    - Septrafilm/Genzyme
    - Hyalgan/Genzyme
    - Topamax/Johnson & Johnson
    - Vioxx/Merck
    - Duodenoscopes/Olympus
    - Bone growth stimulators/Orthofix
    - Bextra, Lyrica, Zyvox/Pfizer
    - Detrol LA/Pfizer
    - Protonix/Pfizer
    - OP-1, Calstrux/Stryker
    - Lupron/TAP Pharmaceuticals
    - Adcirca, Remodulin, Tyvaso, and Orenitram/United Therapeutics
  - Southern District of New York
    - Azasite/Merck
    - Xifaxan, Apriso, Relistor, MoviPrep, OsmoPrep, Solesta, and Deflux/Salix
  - Western District of New York
    - Xibrom/Bausch & Lomb
  - Eastern District of Pennsylvania
    - Evista/Eli Lilly
    - Zyprexa/ Eli Lilly
    - Rituxan/Genentech
    - Risperdal/Johnson & Johnson
    - Vyvanse, Adderall/Shire
  - District of Delaware
    - Zoladex/AstraZeneca
  - District of Maryland
    - Atrovent, Combivent, Aggrenox/Boehringer Ingelheim
    - NovoSeven/Novo Nordisk
    - Remodulin, Tyvaso/United Therapeutics
  - District of Columbia
    - Victoza/Novo Nordisk
    - Keppra/UCB
  - Western District of Virginia
    - Depakote/Abbott Laboratories
  - Northern District of Georgia
    - Botox/Allergan

- Eastern District of Michigan
  - Myoview/GE Healthcare
- Northern District of Illinois, Eastern Division
  - Lovenox/Sanofi
- Western District of Oklahoma
  - Rapamune/Pfizer
- Northern District of California
  - Tarceva/Genentech
- Office of the Inspector General
  - Lovaza/ GlaxoSmithKline

Evaluated alleged conduct, quantified relevant sales, and assessed the causal connection, if any, between allegations in the case and sales at issue using economic, biostatistical, and epidemiologic approaches.

- **State of Texas v. AstraZeneca LP**  
*District Court of the 353rd Judicial District, Travis County Austin*  
Provided expert support, as well as consulting support, to Counsel for AstraZeneca in connection with allegations of improper marketing practices with respect to Seroquel.
- **U.S. ex rel. Brown v. Celgene Corp.**  
*US District Court for the Central District of California*  
Provided consulting support to Counsel for Celgene in connection with allegations of improper marketing practices with respect to Thalomid and Revlimid.
- **U.S. ex rel. Nevyas et al. v. Allergan Inc.**  
*US District Court for the Eastern District of Pennsylvania.*  
Provided consulting support to Counsel for Allergan in connection with allegations of improper marketing practices with respect to eye care medications.
- **U.S. ex rel. Banigan and Templin, et al, v. Organon USA Inc, et al.**  
*US District Court, District of Massachusetts*  
Provided consulting support to Counsel for Omnicare in connection with allegations that it received kickbacks from Organon to promote the antidepressants Remeron and Remeron SolTab.
- **United States of America v. State of Florida**  
*US District Court for the Southern District of Florida*  
Provided consulting support to Counsel for the State of Florida in this dispute about whether the State has caused some medically complex or fragile children to be unnecessarily segregated in nursing facilities and placed others at risk of being unnecessarily segregated in such facilities.
- **Multiple State Attorneys' General v. GlaxoSmithKline**  
Provided economic, statistical, and epidemiological consulting support to Counsel for GlaxoSmithKline in connection with allegations of improper marketing practices with respect to Avandia.

- **In the Matter of National Football League v. Thomas Brady**  
Appeal Hearing, June 23, 2015  
Supported Dean Edward Snyder on behalf of the NFLPA and Tom Brady in his testimony concerning the nature of the statistical evidence in “deflategate.”
- **DEA v. Holiday C.V.S., L.L.C., d/b/a CVS Pharmacy #219 and #5195**  
Testified on behalf of CVS in administrative proceedings before the Drug Enforcement Administration. Testimony included attention to dispensing patterns of certain controlled substances.
- **United States ex rel. Strom v. Scios, Inc. and Johnson & Johnson**  
*US District Court for the Northern District of California, San Francisco*  
Supported economic expert in analyzing the impact of alleged off-label promotion and payment of kickbacks with respect to Natrecor.
- **Onyx Pharmaceuticals, Inc. v. Bayer Corporation, Bayer AG, Bayer Healthcare LLC, and Bayer Schering Pharma AG**  
*US District Court for the Northern District of California, San Francisco*  
Supported economic expert in analyzing lost profits stemming from breach of contract claims in the area of oncology.
- **United States of America, ex. rel. John Underwood v. Genentech, Inc.**  
*US District Court for the Eastern District of Pennsylvania*  
Supported economic expert in analyzing impact of alleged off-label promotion and payment of kickbacks with respect to Rituxan.
- **Zyprexa Products Liability Litigation**  
*US District Court for the Eastern District of New York*  
Supported multiple economic and statistics experts in assessments of causation and damages as well as cost-effectiveness of Zyprexa.
- **Glaxo Americas, et al. v. Internal Revenue Service**  
*US Tax Court*  
Supported econometrics experts in assessing the impact of marketing on pharmaceutical sales.
- **Grider v. Keystone Healthplan Central et al.**  
*US District Court for the Eastern District of Pennsylvania*  
Supported Defendant’s liability expert concerning allegations of improper payment for physician services.
- **TAP Pharmaceutical Products, et al., v. Atrix Laboratories and Sanofi-Synthélabo**  
*US District Court, Northern District Of Illinois, Eastern Division*  
Analyzed Plaintiff’s price erosion, lost profits, and reasonable royalty damages calculations in connection with a pharmaceutical patent dispute, and developed economic analyses as input into Defendant’s expert assessment.
- **Remeron Direct Purchaser Antitrust Litigation**  
*US District Court, New Jersey*  
Supported economic experts on damages and market definition issues related to delayed generic entry and critiqued Plaintiffs’ expert reports.

- **Non-Participating Manufacturer Adjustment Proceeding Under the Tobacco Master Settlement Agreement Between the Settling States and the Participating Manufacturers**  
*Arbitration Proceeding Before Professor Daniel McFadden and The Brattle Group*  
Analyzed on behalf of the settling states whether the disadvantages of the 1998 Master Settlement Agreement were a “significant factor” contributing to the market share loss of the participating manufacturers in 2003 and 2004.
- **Applied Molecular Evolution v. MorphoSys**  
*US District Court, District of Massachusetts*  
Conducted economic analysis of competition with respect to monoclonal antibody discovery, critiqued opposing expert’s damages analysis, and developed input into affirmative damages calculations in support of Defendant’s expert.
- **MorphoSys v. Cambridge Antibody Technology**  
*US District Court, District of Columbia*  
Conducted economic analysis of competition, critiqued opposing expert’s damages analysis, and developed affirmative damages calculations with respect to a patent dispute involving phage display technology. Testified for Plaintiff at deposition.
- **In re Synthroid® Marketing Litigation**  
*US District Court, Northern District of Illinois, Eastern Division*  
Undertook economic analysis of the characteristics of competition that distinguish narrow therapeutic index drugs, for class certification matter.
- **Bellin Health Systems, Inc. v. Aurora Health Care, Inc. and Aurora Health Care Northeast, Inc.**  
*US District Court, Eastern District of Wisconsin*  
Developed economic analysis of competition in the hospital services industry, as well as damages analysis to support experts’ opinions.
- **CDC Technologies v. IDEXX Laboratories**  
*US District Court, District of Massachusetts*  
Provided economic analysis of competition in the veterinary products industry as input into expert’s assessment.
- **Brand Name Prescription Drug Litigation**  
*US District Court, Northern District of Illinois*  
Prepared economic analysis of competition in the retail drug industry, including assessment of Plaintiffs’ Sherman Act and Robinson-Patman Act claims.
- **Laboratorios A.F. Aplicaciones Farmaceuticas, S.A. de C.V. v. Rhone Poulenc Rorer, Inc., et al.**  
*US District Court, Eastern District of Pennsylvania*  
Assessed Plaintiffs’ damages estimation surrounding product injunction with respect to the use of a particular drug in Mexico.
- **Sylvia Bruce et al., v. Trustees of Boston University**  
*US District Court, District of Massachusetts*  
Studied trends in the market for nurse professionals and nurse educators, including examination of market growth conditions and compensation structure over time.

## HEALTH ECONOMICS PUBLICATIONS AND PRESENTATIONS

- **Health Care Litigation**
- **Economic Burden of Illness and Impact of Treating:**
  - **Depression**
  - **Anxiety Disorders**
  - **ADHD**
  - **Respiratory Conditions**
  - **Diabetes**
  - **Other Disease States**
- **Impact of Illness and Its Treatment on Employee Productivity**
- **Other Economic Issues in the Health Care Sector**

### Health Care Litigation

“Economists’ Use of Data in Pharmaceutical Antitrust Cases,” (with Mark Lewis, Tamar Sisitsky, David Mishol, Carletta Bruno) in: *Pharmaceutical Industry Antitrust Handbook*, Section of Antitrust Law, American Bar Association, 2018 (second edition).

“Mass. Marijuana Laws Could Have Far-Reaching Impact,” (with Catherine Alford, Crystal Pike) *Law360*, September 25, 2017.

“Learning From Social Media For Adverse Event Reporting,” (with Mei Sheng Duh, Brian Ellman, Marc Van Audenrode, Pierre Y. Cremieux) *Law360*, May 23, 2017.

“Legal Considerations in a World of Comparative Effectiveness Research,” (with Paul Kalb, Crystal Pike) in: Birnbaum H., Greenberg P. (eds) *Decision Making in a World of Comparative Effectiveness Research*. Adis, 2017.

“United States: Economics,” (with Mark Berberian, Jake Cheng, Pierre-Yves Cremieux, Edward Davis, Mark Lewis), Chapter 7 in: *The Antitrust Review of the Americas, 2017*, Global Competition Review.

“Practical Uses For Machine Learning In Health Care Cases,” (with Mihran Yenikomshian, Lisa B. Pinheiro, Jimmy Royer) *Law360*, September 22, 2016.

“Pay-For-Delay & Stock Prices: Smoking Gun Or Damp Squib?” (with Pierre Y. Cremieux, Ted Davis, Mark J. Lewis) *Law360*, August 24, 2016.

“Stock Prices Aren’t Enough For ‘Rule Of Reason’ Analysis,” (with Pierre Y. Cremieux, Ted Davis, Mark J. Lewis) *Law360*, July 19, 2016.

“Machine-Learning Algorithms Can Help Health Care Litigation,” (with Lisa B. Pinheiro, Jimmy Royer, Nick Dadson) *Law360*, June 8, 2016.

“Can The Life Sciences Industry Bank On Biosimilars?” (with Tamar Sisitsky, Richard A. Mortimer), *Law360*, April 13, 2016.

“Viewing Recent Opioid Regulations In Context,” (with Crystal T. Pike, Kenneth Weinstein, Pavel Darling), *Law360*, April 1, 2016.

“Correlation Or Cause: Brand-Name Drug Prescription Rates,” (Tamar Sisitsky, Richard A. Mortimer), *Law360*, March 23, 2016.

Signatory for Appellees, Brief of Antitrust Economists as Amici Curiae before the Third Circuit, Effexor XR Antitrust Litigation, No. 15-1184; February 23, 2016. Reverse payments matter involving Effexor XR in which we argued that assessment of “large and unexplained” needs to include all consideration exchanged, not just monetary consideration.

Signatory for Appellees, Brief of Antitrust Economists as Amici Curiae before the Third Circuit, Mylan v. Warner Chilcott Public Ltd. Co., et al., No. 15-2236; December 21, 2015. Product hopping matter involving Doryx in which we described the importance of incremental innovation.

Signatory for Appellees, Brief of Antitrust Economists as Amici Curiae before the First Circuit, Loestrin 24 Fe Antitrust Litigation, No. 14-2071, 15-1250; August 27, 2015. Reverse payments matter involving Loestrin 24 Fe in which we focused on the acceleration clause and exchange of fair value.

Signatory for Appellants, Brief of Antitrust Economists as Amici Curiae before the Second Circuit, State of New York v. Actavis plc & Forest Labs, No. 14-4624; January 15, 2015. Product hopping matter involving Namenda XR in which we described the economic effects of barriers to exit.

“Big Data Can Yield Big Insights On Promotional Practices,” (with Tammy Sisitsky), *Law360*, August 14, 2014.

Signatory for Appellees, Brief of Antitrust Economists as Amici Curiae before the Third Circuit, Lamictal Direct Purchaser Antitrust Litigation, No. 14-1243; June 3, 2014. Reverse payments matter involving Lamictal in which we described the appropriate way to implement the Actavis framework.

“What Attorneys Should Know About FDA’s MedWatch Data,” (with Mei Sheng Duh, Pierre Y. Cremieux, Brian Ellman), *Law360*, January 30, 2014.

Signatory for Respondents, Brief of Antitrust Economists as Amici Curiae before the Supreme Court, Federal Trade Commission v. Actavis, Inc., et al., No. 12-416 (February 28, 2013). Reverse payments matter involving AndroGel in which we argued that the scope of patent test is the proper standard.

“Little Guidance for Lower Courts in FTC v. Actavis,” (with Leslie E. John and Jason A. Leckerman) *Today’s General Counsel*, Aug/Sept 2013.

“Prioritizing Safety Versus Budget: FDA and CMS Adopt Different Stances,” (with Tamar Sisitsky) *Food and Drug Law Institute Update*, May/June 2012.

“Confounding Factors In Off-Label Drug Use,” (with Tamar Sisitsky and Crystal T. Pike), *Health Affairs*. 31, no.2 (2012):460.

“An Effective Way to Quantify the Safety Profile of a Drug or Device When Background Toxicity Rates Are Low,” (with Eric S. Wei, Brian Claggett, L.J. Wei) *Food and Drug Law Institute Update*. Jan/Feb 2011; 65-68 (online edition).

“Economists’ Use of Data in Pharmaceutical Antitrust Cases,” (with Tamar Sisitsky, David Mishol, Carletta Bruno) in *Pharmaceutical Industry Antitrust Handbook*, Section of Antitrust Law, American Bar Association, 2009.

“Legal and Economic Perspectives Concerning U.S. Government Investigations of Alleged Off-Label Promotion by Drug Manufacturers,” (with Dr. Paul Kalb) *PharmacoEconomics*. 2009; 27(8).

“Economic Analysis Has Growing Role in Off-Label Promotion Cases,” (with Tamar Sisitsky). Guest Commentary, *Rx Compliance Report*, May 21, 2009.

“Off-Label Use of Drugs,” presented at The Pharmaceutical Industry: Economics, Regulation, and Legal Issues, a judicial symposium in the Judicial Education Program, Northwestern Law School, May 5, 2009.

“Economic Analysis in Off-Label Promotion Cases,” (with Tamar Sisitsky) *Law360*, February 9, 2009.

“The role of epidemiology in drug safety litigations,” (with MS Duh, JR Weiner) *Food and Drug Law Institute Update*. Nov/Dec 2007: 31-34.

“A Roundtable Discussion: The Importance of Causation Analysis in Mass Tort Cases,” (with G Lykos, S Gourley, C Davies) *Food and Drug Law Institute Update*, November/December 2006.

“Product Liability for FDA Regulated Products: In What Kind of World Are We Living?” Invited speaker at the *Food and Drug Law Institute* conference, January 2005.

“Administrative Claims Data: A Valuable Tool in Pharmaceutical Litigation,” (with HG Birnbaum) *Food and Drug Law Institute Update*. 2004; 1: 12-14.

“Product Liability in the Pharmaceutical Industry,” (with PY Cremieux) *Food and Drug Law Institute Update*. 2004; 2: 13-16.

### **Economic Burden of Illness and Impact of Treating Depression**

“Burden of Treatment Resistant Depression in Medicare: A Retrospective Claims Database Analysis,” (with Dominic Pilon, Kruti Joshi, John Sheehan, Miriam Zichlin, Peter Zuckerman, Patrick Lefebvre) poster presented at the annual meeting of the *American Psychiatric Association*, 2019.

“Characteristics of Privately Insured Patients Diagnosed with Major Depressive Disorder and Suicide Ideation or Suicide Attempt,” (with Maryia Zhdanova, Cheryl Neslusan, Dominic Pilon, John Sheehan, Laura Morrison, Nina Shak, Patrick Lefebvre) poster presented at the annual meeting of the *American Psychiatric Association*, 2019.

“Healthcare Resource Utilization and Costs Associated with Postpartum Depression: Commercially Insured Households,” (with Ming-Yi Huang, Keziah Cook, Erica Birk, Deepshikhar Gupta, Anita Chawla, Adi Eldar-Lissai, C. Neill Epperson) poster presented at annual meeting of *Academy of Managed Care Pharmacy (AMCP) and Specialty Pharmacy*, 2019.

“Direct and Indirect Cost Burden and Change of Employment Status in Treatment-Resistant Depression: A Matched-Cohort Study Using a US Commercial Claims Database,” (with TB Amos, N Tandon, P Lefebvre, D Pilon, RL Kamstra, I Pivenva) *The Journal of Clinical Psychiatry*, 2018 Mar/Apr; 79(2). pii: 17m11725. doi: 10.4088/JCP.17m11725.

“Costs of Depression in the Workplace,” *Let’s Talk: The Experts Blog About Mental Health, Journal of Clinical Psychiatry*, May 13, 2015.

“Growing Burden: Toll of Major Depression Now Put At \$210 Billion A Year,” *Common Health*, WBUR (Boston NPR news station), March 11, 2015.

“The Growing Economic Burden of Depression in the U.S.,” *Scientific American MIND Guest Blog*, February 25, 2015.



“Focus on Healthcare Economics,” *Journal of Clinical Psychiatry: Focus Collections From Psychiatrist.com*, 10.4088/PP.15013foc0

“The Economic Burden of Adults With Major Depressive Disorder in the United States (2005 and 2010),” (with Andree-Anne Fournier, Crystal Pike, Tammy Sisitsky, Ronald C. Kessler) *Journal of Clinical Psychiatry*. 2015;76(2):155-162.

“Comparing Treatment Persistence, Healthcare Resource Utilization, and Costs in Adult Patients with Major Depressive Disorder Treated with Escitalopram or Citalopram,” (with EQ Wu, R Ben-Hamadi, AP Yang, E Yang, MH, Erder, MH) *American Health & Drug Benefits*. 2011; 4(2):78-87.

“Employer burden of mild, moderate, and severe major depressive disorder: mental health services utilization and costs, and work performance,” (with HG Birnbaum, RC Kessler, D Kelley, R Ben-Hamadi, VN Joish) *Depression and Anxiety*. 2010; 27 (1), 78-89.

“Assessing the relationship between compliance with antidepressant therapy and employer costs among employees in the United States,” (with HG Birnbaum, R Ben-Hamadi, D Kelley, M Hsieh, B Seal, E Kantor, PY Cremieux). *Journal of Occupational and Environmental Medicine*. Feb 2010;52(2):115-24.

“Determinants of direct cost differences among US employees with major depressive disorders using antidepressants,” (with HG Birnbaum, R Ben-Hamadi, M Hsieh, J Tang, C Reygrobellet) *Pharmacoeconomics*. 2009;27(6):507-17.

“Healthcare resource utilization and costs of mild, moderate, and severe depression in the workforce in the United States,” (with HG Birnbaum, R Kessler, V Joish, D Kelley, R Ben-Hamadi, M Hsieh) *European Psychiatry*. 2009; 24, S614-S614.

“Assessing the relationship between compliance with antidepressant therapy and costs among employees in the United States,” (with HG Birnbaum, R Ben-Hamadi, D Kelley, M Hsieh, B Seal, PY Cremieux) *European Psychiatry*. Volume 24, Supplement 1, 2009, Page S498.

“Antidepressant treatment patterns and costs among US employees,” (with HG Birnbaum, J Tang, M Hsieh, EQ Wu, C Amand, R Ben-Hamadi) *Journal of Medical Economics*. 2009;12(1):36-45.

“Treatment persistence, healthcare utilization and costs in adult patients with major depressive disorder: a comparison between escitalopram and other SSRI/SNRIs,” (with EQ Wu, E Yang, AP Yu, R Ben-Hamadi, M Haim Erder) *Informa UK Ltd* . 2009; 12 (2), 124-135.

“Treatment Persistence, Healthcare Utilization and Costs in Adult Patients with Major Depressive Disorder: A Comparison between Escitalopram and Other SSRI/SNRIs,” (with Wu EQ, Yang E, Yu AP, Ben-Hamadi R, Erder MH). *Journal of Medical Economics*. 2009;12(2):124-35.

“Health Care Resource Utilization And Costs Of Mild, Moderate, And Severe Depression In The United States,” (with HG Birnbaum, R Kessler, VN Joish, D Kelley, M Hsieh, R Ben-Hamadi) *Value in Health*. 2008; 11 (6), A588-A589.

“Workplace Burden Of Mild, Moderate, And Severe Depression In The United States,” (with HG Birnbaum, R Kessler, B Seal, D Kelley, M Hsieh, R Ben-Hamadi) *Value in Health*. 2008; 11 (6), A590-A590.

“Comparison of treatment persistence, hospital utilization and costs among major depressive disorder geriatric patients treated with escitalopram versus other SSRI/SNRI antidepressants,” (with EQ Wu, E

Yang, A Yu, R Ben-Hamadi, M Haim Erder) *Current Medical Research and Opinion*. 2008; 24 (10), 2805-2813.

“Comparison of escitalopram versus citalopram for the treatment of major depressive disorder in a geriatric population,” (with EQ Wu, E Yang, A Yu, M Haim Erder) *Current Medical Research and Opinion*. 2008; 24 (9), 2587-2595.

“The Risks Of Multiple Generic Substitution Of Antiepileptic Drugs: The Case Oftopiramate,” (with J Lelorier, MS Duh, PE Paradis, D Latremouille-Viau, O Sheehy) *Value in Health*. 2008; 11 (3), A151-A151.

“Lifetime and 12-month prevalence of bipolar spectrum disorder in the National Comorbidity Survey replication,” (with KR Merikangas, HS Akiskal, J Angst, RM Hirschfeld, M Petukhova, RC Kessler) *Archives of General Psychiatry*. May 2007;64(5):543-52.

“Antidepressant Treatment Patterns and Related Costs Among U.S. Employees,” (with HG Birnbaum, J Tang, M Hsieh, EQ Wu, et al.) poster presented at the *American Psychiatric Association Annual Meeting*, 2007.

“Comparison of Health Care Costs and Hospitalization Days of Elderly Major Depressive Disorder Patients Treated with Escitalopram and Other Antidepressants,” (with EQ Wu, E Yang, MH Erder, AP Yu, M Buessing) podium presentation at annual meeting of *International Society for Pharmacoeconomics and Outcomes Research*, 2007.

“Health Care Costs and Resource Use in Patients with Major Depressive Disorder: A Comparison between Escitalopram and Other Antidepressants,” (with EQ Wu, E Yang, MH Erder, AP Yu, M Buessing) poster presented at annual meeting of *International Society for Pharmacoeconomics and Outcomes Research*, 2007.

“Comparing Treatment Compliance, Hospitalization, and Costs of Elderly MDD Patients on Escitalopram and Citalopram,” (with EQ Wu, E Yang, MH Erder, M Buessing) *International Health Economics Association (ISPOR)*, 2007.

“Health Care Costs and Resource Use in Patients with Major Depressive Disorder: A Comparison between Escitalopram and Other Antidepressants,” (with EQ Wu, E Yang, MH Erder, M Buessing) *International Society for Pharmacoeconomics and Outcomes Research (ISPOR)*, 2007.

“Health care costs and resource use in patients with major depressive disorder: a comparison between escitalopram and other antidepressants (SSRI/SNRI),” (with EQ Wu, E Yang, MH Erder, M Buessing) *International Society for Pharmacoeconomics and Outcomes Research (ISPOR)*, 2007.

“Comparison of Health Care Costs and Hospitalization Days of Elderly Major Depressive Disorder Patients Treated with Escitalopram and Other Antidepressants,” (with EQ Wu, E Yang, MH Erder, M Buessing) *International Society for Pharmacoeconomics and Outcomes Research (ISPOR)*, 2007.

“Comparing Treatment Compliance and Hospitalization of Elderly MDD Patients on Escitalopram and Other SSRI/SNRIs,” (with EQ Wu, E Yang, MH Erder, M Buessing) *New Clinical Drug Evaluation Unit (NCDEU)*, 2007.

“Comparing Treatment Compliance, Hospitalizations, and Costs of Elderly MDD Patients on Escitalopram and Citalopram,” (with EQ Wu, E Yang, MH Erder, M Buessing) *Institute on Psychiatric Services (APA-I)*, 2007.

“Treatment Compliance of Adult Depressed Patients on Escitalopram and Citalopram,” (with EQ Wu, E Yang, MH Erder, M Buessing) *European College of Neuropsychopharmacology (ECNP)*, 2007.

“Treatment Resistant Depression – Economic Burden of the Disease and Its Costs to US Employers,” Invited presentation to Cyberonics Employer Expert Panel/Advisory Board, New York, NY, March 2007.

“Considering the costs of bipolar depression,” (with RC Kessler, HS Akiskal, M Ames, HG Birnbaum, RM Hirschfeld, PS Wang) *Behavioral Healthcare*. 2007 Jan; 27(1): 45-7.

“Annual Costs Associated With Patterns Of Antidepressant Treatment Response Among Employees,” (with EQ Wu, HG Birnbaum, R Ben-Hamadi, AP Yu, J Tang, I Gilloteau, E) *Value in Health*. 2006; 9 (3), A66-A66.

“Annual Costs Associated with Patterns of Antidepressant Treatment Response among Employees,” (with Wu EQ, Birnbaum H, Ben-Hamadi R, Yu A, Tang J, Gilloteau I, Smadja E.) *International Society for Pharmacoeconomics & Outcomes Research (ISPOR)*, 2006.

“Patterns of Antidepressant Treatment Response in an Employed Population,” (with Wu EQ, Birnbaum H, Ben-Hamadi R, Tang J, Gilloteau I, Smadja E.) *American Psychiatric Association (APA) Annual Meeting*, 2006.

“The Economic Burden of Depression: Societal and Patient Perspectives,” (with HG Birnbaum) In J. Licinio and M.-L. Wong, *Biology of Depression. From Novel Insights to Therapeutic Strategies* (pp. 33-45). John Wiley & Sons, Ltd. 2005.

“The Economic Burden of Depression in the U.S.: Societal and Patient Perspectives,” (with HG Birnbaum) *Expert Opinion on Pharmacotherapy*. 2005; 6(3): 369-376.

“Direct Health Care Cost Of Depressive Disorders In The United States: A Patient Time Profile,” (with HG Birnbaum, R Kessler, E Moyneur, S Lowe, S Leong, D Mallett) *Value in Health*. 2004; 7(3), 271-271.

“Cost And Comorbidities Associated With Bipolar Disorder,” (with A Parece, W EQ, HG Birnbaum, Z Huang, T Victor, R Kessler) *Value in Health*. 2004; 7(3), 272-273.

“Cost and Comorbidities Associated with Bipolar Disorder,” (with Parece A, Wu EQ, Birnbaum HG, Huang Z, Victor T, Kessler RC) *International Society for Pharmacoeconomics & Outcomes Research (ISPOR)*, 2004.

“Comorbidities and Cost Associated with Bipolar Disorder,” (with A Parece, EQ Wu, HG Birnbaum, Z Huang, T Victor, RC Kessler) poster presented at *American Public Health Association’s (APHA) 132nd Annual Meeting*, 2004.

“Drug Treatment Patterns of Bipolar Disorder and Associated Costs,” (with EQ Wu, HG Birnbaum, Z Huang, RC Kessler, A Parece, T Victor) poster presented at *National Institute of Mental Health’s (NIMH) New Clinical Drug Evaluation Unit (NCDEU) Meeting*, 2004.

“Drug treatment patterns and associated costs in bipolar disorder,” (with EQ Wu, HG Birnbaum) *American Public Health Association 132nd Annual Meeting*, 2004.

“Drug Treatment Patterns of Bipolar Disorder and Associated Costs,” (with Wu EQ, Birnbaum HG, Kessler RC, Huang Z, Victor T.) *International Society for Pharmacoeconomics & Outcomes Research (ISPOR)*, 2004.

- “Depression and Fibromyalgia: Treatment and Cost When Diagnosed Separately or Concurrently,” (with R Robinson, M Morley, T Sisitsky, HG Birnbaum, F Wolfe) *Journal of Rheumatology*. 2004; 31(8): 1621-1629.
- “Economic Implications of Treatment-Resistant Depression Among Employees,” (with HG Birnbaum, P Corey-Lisle, M Marynchenko, A Claxton) *Pharmacoeconomics*. 2004; 22(6):363-373.
- “Money Can’t Buy Happiness...” (with HG Birnbaum, RC Kessler) *Business & Health*, April 15, 2004.
- “The direct health care cost of depressive disorders in the United States in 2000,” (with R Kessler, HG Birnbaum, E Moyneur, SA Leong, SW Low) *European Neuropsychopharmacology*. 2003; 13, S263.
- “The Economic Burden Of Depression In 2000” (with R Kessler, P Corey-Lisle, HG Birnbaum, S Leong, S Lowe) *Value in Health*. 2003; 6 (3), 356-356.
- “The Economic Burden of Depression in the United States: How Did It Change Between 1990 and 2000?” (with HG Birnbaum, RC Kessler, S Leong, S Lowe) *Journal of Clinical Psychiatry*. 2003; 12: 1465-1475.
- “Economic Impact of Olanzapine/Fluoxetine Combination Therapy Among Patients Treated for Depression: A Pilot Study,” (with P Corey-Lisle, HG Birnbaum, M Marynchenko, S Dube) *Psychopharmacology Bulletin*. 2003; 37(3): 90-98.
- “Economic Consequences of Not Recognizing Bipolar Disorder Patients: A Cross-Sectional Descriptive Analysis,” (with HG Birnbaum, L Shi, E Dial, E Oster, D Mallet) *Journal of Clinical Psychiatry*. 2003; 64(10): 1201-1209.
- “The Economic Burden of Depression with Painful Symptoms,” (with HG Birnbaum, S Leong, R Robinson) *Journal of Clinical Psychiatry*. 2003; 64(suppl 7): 17-23.
- “Healthcare Cost of Depression: a Patient Time Perspective,” poster presented at annual meeting of *European College of Neuropsychopharmacology*, 2003.
- “Patterns Of Treatment Among Bipolar Disorder Patients Treated With Antidepressants,” (with HG Birnbaum, E Dial, EF Oster, L Shi) *Value in Health*. 2003; 6(3), 354-354.
- “Economic Burden Of Not Recognizing Bipolar Disorder Patients,” (with HG Birnbaum, E Dial, EF Oster, PE L Shi) *Value in Health*. 2003; 6(3), 353-353.
- “Economic Burden of Not Recognizing Bipolar Patients,” poster presented at annual meeting of *International Society for Pharmacoeconomics and Outcomes Research*, 2003.
- “Depression and Fibromyalgia: Treatment Patterns and Cost,” poster presented at annual meeting of *International Society for Pharmacoeconomics and Outcomes Research*, 2003.
- “Comparing the Economic Burden of Depression in 1990 and 2000,” poster presented at annual meetings of *American Psychiatric Association* as well as *International Society for Pharmacoeconomics and Outcomes Research*, 2003.
- “Patterns of Treatment among Bipolar Patients,” poster presented at annual meeting of *International Society for Pharmacoeconomics and Outcomes Research*, 2003.
- “Depression and Fibromyalgia: Treatment and Cost When Diagnosed Separately or Concurrently,” poster presented at annual meeting of *Academy of Managed Care Pharmacy*, 2003.

“The Economics of Women and Depression: an Employer Perspective,” (with S Leong and HG Birnbaum) *Journal of Affective Disorders* March 2003, based on Summit on Women and Depression, proceedings of a conference sponsored by the *American Psychological Association* and the *National Institute of Mental Health*.

“The economics of women and depression: an employer's perspective,” (with HG Birnbaum, SA Leong) *Journal Of Affective Disorders*. 2003; 74 (1), 15-22.

“Identification of a Claims Data ‘Signature’ and Economic Consequences for Treatment-Resistant Depression,” (with HG Birnbaum, M Marynchenko) *Journal of Clinical Psychiatry* 2002; 63: 717-26.

“Identification of claims data ‘signature’ and economic consequences of treatment-resistant depression,” (with P Corey-Lisle, A Claxton, HG Birnbaum, M Marynchenko, G Gandhi) *European Neuropsychopharmacology*. 2001; 11, S350.

“Identification And One-Year Costs Of Treatment-Resistant Depression In A Claims Data Analysis,” (with P Corey-Lisle, A Claxton, HG Birnbaum, M Marynchenko) *Value in Health*. 2001; 4 (6), 458-458.

“Depression and Work Productivity: The Comparative Costs of Treatment Versus Nontreatment,” (with G Simon, C Barber, R Frank, R Rose, P Wang, RC Kessler) *Journal of Occupational and Environmental Medicine*. 2001; 43(1): 2-9.

“Cost of Depression: Current Assessment and Future Directions,” (with S Leong and HG Birnbaum) *Expert Review of Pharmacoeconomics & Outcomes Research*. 2001; 1(1): 69-76.

“Treatment-Resistant Depression: Retrospective Evaluation of Economic Consequences,” (with P Corey-Lisle, A Claxton, HG Birnbaum, M Marynchenko) poster presented at annual meeting of *American Psychiatric Association*, 2001.

“Assessing the Economic Impact of Psychiatric Disorders: Where to Begin?” (with HG Birnbaum, S Leong) *Expert Opinion on Pharmacotherapy*. 2001; 2(4): 641-52.

“The Impact of Antidepressant Use on Social Functioning: Reboxetine Versus Fluoxetine,” (with A Arcelus, HG Birnbaum, C Rowland, L Venditti, T Williamson) *International Clinical Psychopharmacology*. 2000; 15(5): 279-89.

“The Workplace Burden of Depression: Underlying Causes, Recent Empirical Findings, and Future Directions,” (with HG Birnbaum) *TEN: The Economics of Neuroscience*. 2000; 2(6): 37-40.

“Management of Major Depression in the Workplace: Impact on Employee Work Loss,” (with HG Birnbaum, PY Cremieux, RC Kessler) *Disease Management & Health Outcomes*. 2000; 7(3): 163-71.

“Economic Analysis: Defining Social Outcome Parameters and the Cost Impact of Mental Health Disability,” (with HG Birnbaum) invited presentation to *Disease State Management and Integrated Health Care Delivery Systems*, Beth Israel Hospital, Boston, MA, March 2000.

“The Economic Burden of Depression in the Workplace,” invited speaker at press conference *Societal Impact of Depression: New Data and Implications for Outcomes*, National Foundation for Brain Research, September 1999.

“Economics of Depression and Its Treatment,” invited comment on “Costs of Depressive Disorders” by JF Rosenbaum and TR Hylan, in *Evidence & Experience in Psychiatry*, World Psychiatric Association, 1999.

- “Depression in the Workplace: Effects of Treatment on Short-Term Disability,” (with RC Kessler, C Barber, HG Birnbaum, R Frank, R Rose, G Simon, P Wang) *Health Affairs*. 1999; 18(5): 163-71.
- “Workplace Burden of Depression: Case Study in Social Functioning Using Employer Claims Data,” (with HG Birnbaum, M Barton, RC Kessler, C Rowland, T Williamson) *Drug Benefit Trends*. 1999; 11(8): 6-12.
- “Economics of Behavioral Health: Measuring the ROI & Social Functioning for Intervention of Depression,” Invited speaker at annual meeting of *American Association of Health Plans*, 1999.
- “The Impact of Antidepressant Use on Social Functioning: Reboxetine Versus Fluoxetine,” (with L Venditti, A Arcelus, HG Birnbaum, C Barr, C Rowland, T Williamson) poster presented at annual meeting of *International Society for Pharmacoeconomics and Outcomes Research*, 1999.
- “The Cost of Depression: Productivity in the Workplace,” Invited speaker for teleconference series *Dimensions of Depression: The Horizon Series*, 1999.
- “Workplace Management of Depression: A Case Study in Social Functioning,” Invited speaker at the third annual *Disease Management Congress*, 1999.
- “Workplace Effects of Chronic Depression and Its Treatment,” (with E Berndt, S Finkelstein, R Howland, A Keith, M Keller, AJ Rush, J Russell) *Journal of Health Economics*, 1998.
- “Economic Impact of Improved Work Performance after Treatment of Chronic Depression,” (with J Russell, S Finkelstein, E Berndt) *European Neuropsychopharmacology*. 1996; 6(1003): 128-128.
- “The Pharmacoeconomics of Chronic Depression: Can We Afford Not to Treat?” Invited speaker at International Satellite Symposium of the 10th World Congress of Psychiatry entitled Chronic Depression in 2000 AD: Will it Survive Treatment? Madrid, Spain, August 1996.
- “Depression in the Workplace: An Economic Perspective,” (with RC Kessler, T Nells, S Finkelstein, E Berndt) Invited article in *Selective Serotonin Re-Uptake Inhibitors*, JP Feighner and WF Boyer (eds.), Chichester, UK: John Wiley and Sons, 1996.
- “Improvement in subjective work performance after treatment of chronic depression: some preliminary results. Chronic Depression Study Group,” (with S Finkelstein, E Berndt, RA Parsley, J Russell, M Keller) *Psychopharmacology Bulletin*. 1996; 32(1): 33-40.
- “How Much Does Depression Cost Society?” (with S Finkelstein) Invited article in *The Harvard Mental Health Letter*, October 1994.
- “The Economics of Clinical Depression,” *MIT Management Magazine*, Sloan School of Management, Massachusetts Institute of Technology, Spring 1994.
- “What Depression Is Costing Your Business,” Invited speaker at Depression in the Workplace, It Is Our Business! *Mental Health Association of Connecticut*, Hartford, CT; repeated at annual conference, *Midwest Business Group on Health*, Chicago, IL, March 1994.
- “How to Measure the Costs of Mental Illness in the Workplace,” Invited speaker at National Public Education Campaign on Clinical Depression, *Mental Health Association of Illinois*, Chicago, IL, February 1994.

Press conference with Tipper Gore concerning Analysis Group/Economics' and MIT's research on the economics of depression, sponsored by the National Mental Health Association, National Press Club, Washington, DC, December 1993.

"The Economic Burden of Depression in 1990," (with L Stiglin, S Finkelstein, E Berndt) *Journal of Clinical Psychiatry* 1993; 54(11): 405-418.

"Depression: A Neglected Major Illness," (with L Stiglin, S Finkelstein, E Berndt) *Journal of Clinical Psychiatry* 1993; 54(11).

"Economics of Depression: Costs and Tradeoffs," Invited speaker at Northeast Regional Managed Health Care Congress — Pharmacy Track; repeated at New Hampshire Academy of Family Physicians, Annual Scientific Meeting, Manchester, NH, November 1993.

### **Economic Burden of Illness and Impact of Treating Anxiety Disorders**

"What's So Different about Anxiety Disorders (such as Phobias)?" (with HG Birnbaum and T Sisitsky) in *Phobias*, vol. 7 of the World Psychiatric Association series "Evidence and Experience in Psychiatry," John Wiley & Sons, Ltd. 2004; 337-339.

"The Economic Burden of Anxiety and Stress Disorders," (with RC Kessler) in *Neuropsychopharmacology: The Fifth Generation of Progress*, K. Davis (Ed.), Baltimore, MD: The American College of Neuropsychopharmacology and Lippincott Williams & Wilkins, 2002.

"The Economics of Anxiety Disorders," (with T Sisitsky) *Psychiatric Times' Mental Health Economics: Practical Information on Changes in the U.S. Health Care System*, June 2000.

Press Conference at the National Press Club to release "The Economic Burden of Anxiety Disorders in the 1990s," *Anxiety Disorders Association of America*, July 1999.

"The Economic Burden of Anxiety Disorders in the 1990s," (with J Ballenger, E Berndt, J Davidson, S Finkelstein, A Fyer, T Sisitsky), *Journal of Clinical Psychiatry*. 1999; 60(7): 427-435.

### **Economic Burden of Illness and Impact of Treating ADHD**

"Costs of Attention Deficit-Hyperactivity Disorder (ADHD) in the US: Excess Costs of Persons with ADHD and their Family Members in 2000," (with HG Birnbaum, RC Kessler, S Lowe, K Secnik, et al.) *Current Medical Research and Opinion*. 2005; 21(2): 195-206.

"Incidence and Costs of Accidents among Attention-Deficit/Hyperactivity Disorder Patients," (with A Swensen, R Ben-Hamadi, HG Birnbaum, PY Cremieux, K Secnik) *Journal of Adolescent Health*. 2004; 35(4): 346-349.

"Attention-Deficit/Hyperactivity Disorder: Increased Costs for Patients and Their Families," (with A Swensen, K Secnik, M Marynchenko, HG Birnbaum, A Claxton) *Journal of the American Academy of Child and Adolescent Psychiatry*. 2003; 42(12): 1415-1423.

"Prevalence and Costs of Accidents Among Attention-Deficit/Hyperactivity Disorder Patients," poster presented at annual meeting of *International Society for Pharmacoeconomics and Outcomes Research*, 2002.

"Increased Risk of Accidents and Injuries for Patients with Attention-Deficit/Hyperactivity Disorder," poster presented at annual meeting of *American Psychiatric Association*, 2002.

“Economic Analysis of Patients with Attention Deficit Hyperactivity Disorder,” (with A Swensen, HG Birnbaum, M Marychencko) poster presented at DIA conference 2001.

### **Economic Burden of Illness and Impact of Treating Respiratory Conditions**

“Lower Respiratory Tract Infections: Impact on the Workplace,” (with M Morley, S Leong, HG Birnbaum, G Colice) *PharmacoEconomics*, 2003; 21(10): 749-59.

“Economic Burden of Respiratory Infections in an Employed Population,” (with HG Birnbaum, G Colice, M Morley) *CHEST*, 2002; 122(2): 603-611.

“Direct and Indirect Costs of Asthma to an Employer,” (with W Berger, HG Birnbaum, M Holland, R Auerbach, K Atkins, L Wanke) *Journal of Allergy and Clinical Immunology*, 2002; 109(2): 264-270.

“Economic Burden of Pneumonia in an Employed Population,” (with HG Birnbaum, G Colice, M Morley, M Cifaldi) *Archives of Internal Medicine*. 2001; 161: 2725-31.

“Direct and Indirect Costs of Respiratory Infections,” (with HG Birnbaum, M Morley, M Cifaldi, G Colice) poster presented at annual meeting for *International Society for Pharmacoeconomics and Outcomes Research*, 2001.

“Direct and Indirect Costs of Asthma to an Employer,” (with HG Birnbaum, M Holland, R Auerbach, K Atkins, L Wanke) poster presented at annual meeting of *American Academy of Allergy, Asthma and Immunology*, 2001.

“Direct and Indirect Costs of Asthma to an Employer,” (with HG Birnbaum, LA Wanke, K Atkins) *Value in Health*. 2000; 3(2): 143-143.

“Savings in Direct Medical Costs from the Use of TOBI™ (Tobramycin Solution for Inhalation) in Patients with Cystic Fibrosis,” (with J LeLorier, S Perreault, HG Birnbaum, O Sheehy) *Clinical Therapeutics*. 2000; 22(1): 140-51.

“Savings in Direct Medical Costs Produced by Tobramycin Solution for Inhalation (TOBI®) in Children with Cystic Fibrosis,” (with J LeLorier, S Perreault, HG Birnbaum) poster presented at annual meeting of *International Society for Pharmacoeconomics and Outcomes Research*, 1999.

“Savings in direct medical costs produced by an inhaled solution of tobramycin (TOBI) in children with cystic fibrosis,” (with J LeLorier, S Perreault, HG Birnbaum) *The Netherlands Journal of Medicine*. 1999; 54, S80.

“Savings in Direct Medical Costs Produced By An Inhaled Solution Of Tobramycin (TOBI) In Children With Cystic Fibrosis,” (with J LeLorier, S Perreault, HG Birnbaum) *Value in Health*. 1999; 2(3): 189-189.

“Analysis of Hospitalization and IV Anti-Pseudomonal Antibiotic Use in Cystic Fibrosis Patients on Tobramycin Solution for Inhalation (TOBI®),” (with HG Birnbaum, S Finkelstein, E Berndt, K Otto, B Montgomery, J Kylstra, B Ramsey) poster presented at annual meeting of *North American Cystic Fibrosis*, 1998.



### **Economic Burden of Illness and Impact of Treating Diabetes**

“Obesity’s Impact on Diabetes Patients’ Health-Related Quality of Life in the U.S.,” (with PY Cremieux, J Xie, EQ Wu, A Castor) poster presented at annual meeting of *International Society for Pharmacoeconomics and Outcomes Research 2nd Asia-Pacific Conference*, 2006.

“Original Articles-Epidemiology. Health Services. Psychosocial Research-Productivity And Medical Costs Of Diabetes In A Large Employer Population,” (with S Ramsey, KH Summers, SA Leong, HG Birnbaum, JE Kemner) *Diabetes Care*. 2002; 25(1): 23-29.

“Productivity and Medical Costs of Diabetes in a Large Employer Population,” (with S Ramsey, K Summers, S Leong, HG Birnbaum, J Kemner) *Diabetes Care*. 2002; 25(1): 23-29.

“Economic Outcomes of Diabetes Among an Employed Population,” (with SA Leong, KH Summers, HG Birnbaum, JE Kemner, EC Lentz) *Value in Health*. 2001; 4(2): 116-116.

“Identification of Diabetes Patients Using Claims Data: An Economic Analysis,” (with K Summers, S Leong, HG Birnbaum, J Kemner, S Ramsey) *Drug Benefit Trends*. 2001; 13(suppl B): 28-33.

“Productivity and Medical Costs of Diabetes in a Large Employer Population,” (with S Ramsey, K Summers, S Leong, HG Birnbaum, J Kemner) poster presented at annual meeting of *International Society for Pharmacoeconomics and Outcomes Research*, 2001.

### **Economic Burden of Illness and Impact of Treating Other Disease States**

“Cost of Illness: An Ongoing Battle Worth Fighting,” *PharmacoEconomics*. 32 (12), 1151-1152.

“Evaluation of the Value of Web Data for Detecting Drug Adverse Events,” (with Mei S Duh, Pierre Cremieux, Marc Van Audenrode, Francis Vekeman, Paul Karner, Philippe Giguere-Duval, Yongling Xiao, Joe Damron), *Pharmacoepidemiology and Drug Safety*, 23, 235-236.

“Efficacy and effectiveness of depot versus oral antipsychotics in schizophrenia: synthesizing results across different research designs,” (with NY Kirson, PJ Weiden, S Yermakov, W Huang, T Samuelson, SJ Offord), *J Clin Psychiatry*, 74 (6), 568-575.

“Risk of Hepatotoxicity-Related Hospitalizations among Patients Treated with Opioid/Acetaminophen Combination Prescription Pain Medications,” (with MS Duh, F Vekeman, C Korves, P Lefebvre, E Dial, D Latremouille-Viau, RS Wei) *Pain Medicine*. 2010; 11(11): 1718-1725.

“The economic implications of generic substitution of antiepileptic drugs: a review of recent evidence,” (with MS Duh, KE Cahill, PE Paradis, PY Cremieux) *Expert Opin Pharmacother*. 2009 Oct; 10(14): 2317-28.

“The risks and costs of multiple-generic substitution of topiramate,” (with MS Duh, PE Paradis, D Latremouille-Viau, SP Lee, MB Durkin, GJ Wan, MF Rupnow, J LeLorier) *Neurology*. 2009 Jun 16; 72(24): 2122-9.

“Management of anemia: a critical and systematic review of the cost effectiveness of erythropoiesis-stimulating agents,” (with MS Duh, JR Weiner, LA White, P Lefebvre) *PharmacoEconomics*. 2008; 26(2):99-120.

“Impact and treatment of anemia in the elderly: clinical, epidemiological and economic perspectives,” (with MS Duh and A Laytpova) *Expert Rev Pharmacoeconomics Outcomes Res*. 2006 Oct; 6(5): 577-90.

“Estimated costs of prescription opioid analgesic abuse in the United States in 2001: a societal perspective,” (with HG Birnbaum, AG White, JL Reynolds, M Zhang, S Vallow, JR Schein, NP Katz) *Clin J Pain*. 2006 Oct; 22(8): 667-76.

“Economic Cost and Epidemiological Characteristics of Patients with Fibromyalgia Claims,” (with R Robinson, HG Birnbaum, T Sisitsky, M Morley) *Journal of Rheumatology*. 2003; 30(6): 1318-25.

“Epoetin Alfa Is More Effective and Less Costly Relative to Darbepoetin Alfa in Lung Cancer Patients Receiving Treatment for Chemotherapy-Induced Anemia,” (with PY Cremieux, C Piech) poster presented at annual meeting of *American Society of Clinical Oncology*, 2003.

“Productivity Loss Due to Irritable Bowel Syndrome—Reply,” (with HG Birnbaum, S Leong, C Thibeault, R Ben-Hamadi, V Barghout, F Frech, J Ofman) *Arch Intern Med*. 2003; 163: 2249-2250.

“Economic Outcomes of Irritable Bowel Syndrome: an Employer Perspective,” (with HG Birnbaum, S Leong, V Barghout, R Ben-Hamadi, F Frecht) poster presented at annual meeting of *American College of Gastroenterology*, 2001.

“Understanding the Pharmacoeconomic Profile of Cancer,” (with PY Cremieux, HG Birnbaum) *ONE: Oncology Economics*. 2000; 1(10): 36-39.

“Direct and Indirect Costs of Rheumatoid Arthritis to an Employer,” (with HG Birnbaum, M Barton, T Sisitsky, R Auerbach, L Wanke, M Buatti) *Journal of Occupational and Environmental Medicine*, 2000; 42(6): 588-596. Poster presented at annual scientific meeting of *American College of Rheumatology*, 1999.

“Comment: cost comparison of recombinant human erythropoietin and blood transfusion in cancer chemotherapy-induced anemia,” (with S Finkelstein, S Huber) *The Annals of Pharmacotherapy*, September 1997.

### **Impact of Illness and Its Treatment on Employee Productivity**

“A Regulatory Perspective on Productivity Claims: Implications for Future Productivity Research,” (with HG Birnbaum) *Health and Work Productivity: Emerging Issues in Research and Policy*, ed. Ronald Kessler and Paul Stang, Chicago, IL: University of Chicago Press, Spring 2006.

“Linking Administrative Claims Data with Archival Productivity Measures to Inform Employer Decision Making,” (with HG Birnbaum) *Health and Work Productivity: Emerging Issues in Research and Policy*, ed. Ronald Kessler and Paul Stang, Chicago, IL: University of Chicago Press, Spring 2006.

“Prevalence and effects of mood disorders on work performance in a nationally representative sample of U.S. workers,” (with RC Kessler, HS Akiskal, M Ames, HG Birnbaum, RM A, R Jin, KR Merikangas, GE Simon, PS Wang) *American Journal of Psychiatry*. 2006 Sep; 163(9): 1561-8.

“The prevalence and effects of adult attention deficit/hyperactivity disorder on work performance in a nationally representative sample of workers,” (with RC Kessler, L Adler, M Ames, RA Barkley, HG Birnbaum, JA Johnston, T Spencer, TB Ustun) *Journal of Occupational and Environmental Medicine*. 2005 Jun; 47(6): 565-72.

“Measuring Productivity,” Invited workshop presentation at annual meeting of *International Society for Pharmacoeconomics and Outcomes Research*, 2001.

“The Effects of Chronic Medical Conditions on Work Loss and Work Cutback,” (with RC Kessler, K Mickelson, L Meneades, P Wang) *Journal of Occupational and Environmental Medicine*. 2001; 43(3): 218-225.

“Using Linked Administrative Data to Measure the Burden of Illness in the Workplace,” Invited talk at *International Health & Productivity Conference, Health Enhancement Research Organization (HERO)*, February 2001.

“Impact of Illness and Its Treatment on Workplace Costs: Regulatory and Measurement Issues,” (with HG Birnbaum, RC Kessler, M Morgan, P Stang) *Journal of Occupational and Environmental Medicine*. 2001; 43(1): 56-63.

“Linking Data to Determine Productivity Impact of Disease: What To Do,” Marketing Outcomes to Employers, invited moderator at Drug Information Association Annual Meeting, June 2000.

“A Unified Approach to Medical and Workplace Costs of Illness: Linking the Datasets,” Invited speaker at National Managed Health Care Congress, April 2000.

Presentation to Food & Drug Administration concerning measurement issues to consider in formulating industry guidance with respect to productivity claims, January 2000.

“Comparative Burden of Illness at Two Large U.S. Companies,” (with HG Birnbaum, S Wogen, M Holland, PO Deverka, R Epstein) poster presented at annual meeting for *International Society for Pharmacoeconomics and Outcomes Research*, 2000.

“Disease Management: A Unified Approach to Managing Disability and Medical Costs,” Invited speaker at Rehearsing Your Future: Health People, Healthy Companies, 13<sup>th</sup> Annual National Disability Management Conference & Exhibit, Washington Business Group on Health, October 1999.

“Tackling Costs One Disease at a Time,” (with M Barton, HG Birnbaum, PY Cremieux, M Slavin, F D’Souza, B Auerbach) *Business and Health*. 1999; 17(5): 31-37.

“Impact of Illness and Its Treatment on Workplace Productivity,” Invited talk at Centralink and the Partnership for Behavioral Healthcare, May 1998.

“Calculating Return on Investment from Reducing Workplace Costs of Illness,” (with A Baker, E Berndt, S Finkelstein, J Russell) *Drug Benefit Trends*, 1998.

“The Next Phase of Managed Care: Targeting Investments in Employee Health,” (with E Berndt, S Finkelstein) *On Managed Care*, 1997.

“Impact of Illness and Its Treatment on Workplace Productivity,” Invited speaker at Workforce 2000: An Agenda for Improved Health, September 1997.

“Illness and Productivity: Objective Workplace Evidence,” (with H Bailit, E Berndt, S Finkelstein, A Keith) Working Paper, MIT Program on the Pharmaceutical Industry, WP #42-97, May 1997.

“Behavioral Risk Reduction and Performance Enhancement in Action,” Invited speaker at *Employer Summit on Productivity and Behavioral Risk Management*, May 1997.

“The Opportunity Cost of Chronic Illness in the Workplace – Mapping the Landscape,” (with E Berndt, S Finkelstein, A Keith, M Moore) Working Paper, MIT Program on the Pharmaceutical Industry, WP #40-97, March 1997.

“Impact of Illness and Its Treatment on Workplace Productivity,” Invited speaker at MIT/Pfizer conference The Competitive Advantage of a Healthy Workforce, November 1996.

“Health and Worker Productivity,” Invited speaker at annual meeting of Health Economics Roundtable, National Association of Business Economists, September 1996.

“Objective Evidence of the Effects of Health Status on Worker Productivity,” Invited speaker at Work and Health Symposium, International Health Economics Association Annual Meeting, May 1996.

“Calculating the Workplace Cost of Chronic Disease,” (with S Finkelstein and E Berndt), *Business and Health*, 1995.

“Economic Consequences of Illness in the Workplace,” (with S Finkelstein, E Berndt) *Sloan Management Review*, Summer 1995.

“New Frontiers of Pharmacoeconomics – Workplace Costs as a Health Economic Outcome,” Invited speaker at the annual meeting of *Association of Managed Care Pharmacy*, May 1995; Invited speaker at *National Managed Health Care Congress*, April 1995; and invited speaker at *Pharmacoeconomics: How to Successfully Integrate Pharmacoeconomic Studies with Electronic Trials and Disease State Management*, March 1995.

“The Hidden Costs of Illness in the Workplace,” Invited speaker at Employer Executive Track and Behavioral Health Track, National Managed Health Care Congress, April 1994.

“Pharmacoeconomics and Health Policy: Current Applications and Prospects for the Future,” (with A Arcelus, HG Birnbaum, PY Cremieux, J LeLorier, P Ouellette, M Slavin) Invited paper for *PharmacoEconomics*, November 1999.

“Using Health Care Claims Data for Outcomes Research and Pharmacoeconomic Analyses,” (with HG Birnbaum, PY Cremieux, J LeLorier, L Venditti) Invited paper for *PharmacoEconomics*, July 1999.

“The Valuation Process: Using Health Outcomes Research To Determine If Your Product Is Cost Effective,” (with PY Cremieux and G Jetley) Invited conference speaker at *Medical Device Technology Finance & Investment*, April 1999.

“Applications of Pharmacoeconomics: Current Practice and Cutting Edge Techniques,” (with S Finkelstein) Invited speaker at conference on *Management for Physicians, Scientists and Engineers in the Pharmaceutical & Biotechnology Industry*, Massachusetts Institute of Technology. June 1994, 1995, 1996.

### **Other Economic Issues in the Health Care Sector**

“Combining the Power of Artificial Intelligence with the Richness of Healthcare Claims Data: Opportunities and Challenges,” (with N Dadson, L Pinheiro, D Sraer, D Thesmar, R Veliche), *PharmacoEconomics*, March 8, 2019

“Learning from Social Media for Adverse Event Reporting,” (with MS Duh, B Ellman, MV Audenrode, PY Cremieux), *Law360*, May 23, 2017

“Tracing the Path to Health Care Investigation Settlements,” (with K Weinstein, C Pike), *Law360*, April 17, 2017

“Comparison of Systematic Literature Review Inclusion Criteria and the Impact on Evidence-Based Treatment Recommendations: A Parkinson’s Disease Psychosis Case Study,” (with K Cook, K Adamski, D Nellesen, A Chawla) *2017 Association of Managed Care and Pharmacy NEXUS Conference*, Dallas, TX, October 2017.

*Decision Making in a World of Comparative Effectiveness Research: A Practical Guide*. HG Birnbaum and PE Greenberg (eds.), Adis, 2017.

“Perspectives of Comparative Effectiveness Research from the World of Decision Making,” (with D Nellesen, HG Birnbaum) in: Birnbaum H., Greenberg P. (eds.) *Decision Making in a World of Comparative Effectiveness Research*. Adis, 2017.

“Can social media data lead to earlier detection of drug-related adverse events?” (with MS Duh, P Cremieux, MV Audenrode, F Vekeman, P Karner, H Zhang), *Pharmacoepidemiol Drug Safety*. 2016; 25(12): 1425-1433.

“Perspectives on Comparative Effectiveness Research,” (with D Nellesen, HG Birnbaum) *Pharmacoeconomics*. 2010; 28(10): 789-798.

“Introducing perspectives on comparative effectiveness research,” (with HG Birnbaum) *Pharmacoeconomics*. 2010 Oct 1; 28(10): 787-8.

“Does Generic Substitution Always Make Sense?” *Journal of Medical Economics*, Fall 2008.

“Assessing Step Therapy/Generic Switching: Clinical and Economic Implications of Acquisition Costs vs. Total Health Care Costs Paradigm,” (with EQ Wu, MH Erder), Congressional Budget Office, 2008.

“Generic Competition in the US Pharmaceutical Industry,” (with HG Birnbaum, A Saha, H Grabowski, et al.) *International Journal of the Economics of Business*. February 2006; 13(1): 15-38.

“Generic Competition in the Pharmaceutical Industry,” poster presented at annual meetings of *International Society for Pharmacoeconomics and Outcomes Research; International Health Economics Association*, June 2003.

“Pharmaceutical Spending and Health Outcomes in the United States?” (with PY Cremieux, P Ouellette, M Meilleur, S Leong) in *Investing in Health: The Social and Economic Benefits of HealthCare Innovation*, ed. Kent Summers and Irene Farquhar, Elsevier Science Ltd., 2001.

“Consumer Demand for Access to Innovation: Universal Right or Select Privilege?” invited speaker at the annual meeting of the *Canadian Foundation for Pharmacy*, November 1999.

“Price Growth of Prescription Pharmaceutical Preparations: An Update and Extension,” (with E Berndt) *Competitive Strategies in the Pharmaceutical Industry*, American Enterprise Institute for Public Policy Research, 1996.

“An updated and extended study of the price growth of prescription pharmaceutical preparations,” (with E Berndt) *Competitive Strategies in the Pharmaceutical Industry*. 1995; 35-48.

“Consolidation Is a Tonic for Health Care Providers: Trend Toward Managed Care and Ascent of Information Technology Fuel Restructuring of an Industry,” (with P Danzon, L Boothman) *The National Law Journal*, September, 1995.

“Consolidation and Restructuring: The Next Step in Managed Care,” (with P Danzon, L Boothman) in *Health Care Management: State of the Art Reviews*, Hanley & Belfus, Inc., September 1995.

“Social Returns to Research and Development in the Pharmaceutical Industry: A Review of the Technological Spillover Literature,” (with T Nells, A Arcelus) invited speaker at the ad hoc *Economics Meeting of the Pharmaceutical Industry*, June 1994.

“Measuring Price for Voluntary Restraints on Rx Medicine: Reconciling Data in Government and Private Sector Studies,” invited speaker at *Biopharmaceutical Price Restraints in the Purchaser-Driven Market*, International Business Communications, December 1993.

“Price Growth of Prescription Pharmaceutical Preparations: An Update and Extension,” (with E Berndt) Invited paper at conference on *Competitive Strategies in the Pharmaceutical Industry*, American Enterprise Institute for Public Policy Research, Washington, DC, October 1993. Paper also presented at conference on *Productivity*, National Bureau of Economic Research, Cambridge, MA, July 1993 and repeated at the *Ad Hoc Economics Meeting of the Pharmaceutical Industry*, New York, NY, August 1993.

“Economics of Information in the Health Sector,” guest lecturer at master’s course titled *Industrial Economics for Strategic Decisions*, MIT Sloan School of Management, October 1993.

“Emerging Economic Trends in the Health Care Sector: Strategic Implications for the Pharmaceutical Industry,” Invited speaker at conference on *Management for Physicians, Scientists and Engineers in the Pharmaceutical & Biotechnology Industry*, Massachusetts Institute of Technology, June 1993.

*Health Care Reform: The Economic Impact of Managed Competition*, (with P Feldstein, S Hoag, M Eglund) Analysis Group Discussion Paper #93-1, March 1993.

## RELATED ACTIVITIES

Consultant to Special Counsel to Massachusetts Supreme Judicial Court on OUI Cases. Provided analytical support in comprehensive review of cases alleging operating under the influence of drugs and alcohol.

Invited Member of Expert Panel:

- Sanofi-Aventis, assisted in designing economic support program for antidepressant compound, 2005.
- Pfizer and Pharmacia, Valdecoxib Outcomes Research Advisory Board, Best Practices 2002.
- Aventis (Canada), assisted in all aspects of economic analysis of worksite wellness program for cardiovascular fitness, 1996–2002.
- Schering Plough, assisted in addressing economic issues concerning allergies in the workplace, organized by *Business & Health* (with conference proceedings posted to its website), 2001.
- Wyeth Ayerst, assisted in developing managed care outcomes study to support antidepressant/antianxiety compound, 2000.
- Merck-Medco, assisted in providing training to Client Advisory Group concerning use of pharmacoeconomic tools, 1999–2000.
- Abbott Laboratories, assisted in reviewing and refining economic support program for HIV/AIDS compound, 1999.

- Pharmacia, assisted in reviewing clinical data for antidepressant compound and in developing economic research plan, 1998.
- Boehringer Ingelheim, assisted in developing economic support program for antidepressant compound, 1997–1998.
- Merck, assisted in designing economic support program for antidepressant compound, 1997.
- Eli Lilly, assisted in review and refinement of economic support program for antidepressant compound, 1994.