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Dr. Birnbaum joined Analysis Group in 1997, and has been instrumental in establishing the national prominence of the firm's Health Economics and Outcomes Research practice. An applied microeconomist, Dr. Birnbaum has conducted wide-ranging economic investigations regarding the real world comparative effectiveness of alternative treatments, the direct and indirect costs of illness, and models regarding the budget impacts and societal costs of various pharmaceutical, device, and medical interventions. He is an expert in the use of public and private payer claims databases and has used these and other data sources to conduct health economics and outcomes research for pharmaceutical and device manufacturers, managed care organizations, and government agencies. Dr. Birnbaum also has provided expert testimony and litigation support in matters regarding Medicare, Medicaid, and private insurer reimbursement, managed care issues, comparative effectiveness, and allegations of off-label promotion of prescription drugs. He has been a discussant at the Food and Drug Administration regarding Post Marketing Requirements for prescription opioid products. Dr. Birnbaum serves on the editorial board of *PharmacoEconomics*, as well as *Drugs – Real World Outcomes* and has published articles in many leading medical, health economics, and managed care journals. He is a member of the International Society for Pharmacoeconomics and Outcomes Research (ISPOR) Institutional Council and co-chair of the 2012 ISPOR research review committee.

Dr. Birnbaum's health economics work includes the following:

- Research regarding the costs of prescription opioid use and abuse, the consequences of abuse deterrent formulations and comparative effectiveness of new opioids and other treatments for painful conditions.
- Analysis of the cost of illness for specific conditions (e.g. depression, cancer, rheumatoid arthritis), including both direct (medical and pharmaceutical) and indirect (disability) costs, as well as comparative analysis of the characteristics of these illnesses that distinguish them from other conditions.
- Pharmacoeconomic assessments to quantify the workplace costs of illness, based on data gathered in clinical trials case report forms, from administrative databases documenting employee-specific health care costs as well as work loss time, and from epidemiologic or market surveys.
- Development of feasibility studies (involving claims data based models) to assess innovative employer based programs (e.g., capitation joint venture with Medicare to improve retiree health care).
- Creation of simulation models and interactive software applications using claims data on medical outcomes and costs to predict the relative cost-effectiveness of alternative types of treatment such as home infusion therapy.
- Analysis of economic and policy issues regarding the effectiveness of health care delivery initiatives, including various managed care programs, drug abuse treatment services, utilization review programs, reimbursement systems, and alternative care interventions.
- Cost-of-illness research regarding catastrophically expensive illness for use in developing national insurance policy.

- Analysis of health care services for chronic dialysis patients, including estimation of pharmaceutical market size, as well as data validation research regarding the quality of Medicare claims files for these patients.

## EDUCATION

- Ph.D. Economics, Harvard University, Cambridge, MA  
Dissertation: Determinants of Earnings, The Economic Effect of Job Experience and the Effect of Cohorts on Age Earnings Profiles.
- M.A. Economics, Harvard University, Cambridge, MA
- B.A. Miami University

## PROFESSIONAL EXPERIENCE

- 1997 - present Analysis Group, Boston, MA
- 2004 - 2006 Johns Hopkins University, Bloomberg School of Public Health, Department of Health Policy and Management, Associate
- 1989 - 1997 Mikalix & Company, Waltham, MA
- 1984 - 1989 The Health Data Institute, Lexington, MA
- 1974 - 1984 Abt Associates, Cambridge, MA
- 1973 - 1974 Tufts University, Economics Department, Medford, MA

## PUBLICATIONS

- Assessing the economic burden of Alzheimer's disease patients first diagnosed by specialists. Kirson NY, Desai U, Ristovska L, Cummings AK, Birnbaum HG, Ye W, Andrews JS, Ball D, Kahle-Wroblewski K. *BMC Geriatr.* 2016 Jul 11;16:138. doi: 10.1186/s12877-016-0303-5.
- Excess Costs Associated with Possible Misdiagnosis of Alzheimer's Disease Among Patients with Vascular Dementia in a UK CPRD Population. Happich M, Kirson NY, Desai U, King S, Birnbaum HG, Reed C, Belger M, Lenox-Smith A, Price D. *J Alzheimers Dis.* 2016 May 6;53(1):171-83. doi: 10.3233/JAD-150685.
- Basal insulin persistence, associated factors, and outcomes after treatment initiation among people with type 2 diabetes mellitus in the US. Perez-Nieves M, Kabul S, Desai U, Ivanova JI, Kirson NY, Cummings AK, Birnbaum HG, Duan R, Cao D, Hadjiyianni I. *Curr Med Res Opin.* 2016 Apr;32(4):669-80. doi: 10.1185/03007995.2015.1135789. Epub 2016 Jan 13.
- Basal Insulin Persistence, Associated Factors, and Outcomes After Treatment Initiation Among People With Type 2 Diabetes Mellitus In Japan. Hadjiyianni I, Desai U, Ivanova JI, Kirson NY, Enloe CJ, Cummings AG, Birnbaum HG, Suzuki SJ, Duan R, Raibouaa A, Cao D, Perez-Nieves M. *Value Health.* 2015 Nov;18(7):A611-2. doi: 10.1016/j.jval.2015.09.2121. Epub 2015 Oct 20.

Budget impact model of a 5-grass sublingual immunotherapy tablet for the treatment of grass pollen-induced allergic rhinitis. Ivanova JI, Kelkar S, King S, Birnbaum HG, Hocker S, Phipps R, Lankow R. *J Med Econ*. 2015 Nov;18(11):909-18. doi: 10.3111/13696998.2015.1061533. Epub 2015 Jul 6.

Characteristics of high-cost patients diagnosed with opioid abuse. Shei A, Rice B, Kirson NY, Bodnar K, Enloe CJ, Birnbaum HG, Holly P, Ben-Joseph R. *J Manag Care Spec Pharm*. 2015 Oct;21(10):902-12.

Estimating the health care burden of prescription opioid abuse in five European countries. Shei A, Hirst M, Kirson NY, Enloe CJ, Birnbaum HG, Dunlop WC. *Clinicoecon Outcomes Res*. 2015 Sep 15;7:477-88. doi: 10.2147/CEOR.S85213. eCollection 2015.

Medical costs of Alzheimer's disease misdiagnosis among US Medicare beneficiaries. Hunter CA, Kirson NY, Desai U, Cummings AK, Faries DE, Birnbaum HG. *Alzheimers Dement*. 2015 Aug;11(8):887-95. doi: 10.1016/j.jalz.2015.06.1889. Epub 2015 Jul 21.

Impact of a telehealth and care management program on all-cause mortality and healthcare utilization in patients with heart failure. Kao DP, Lindenfeld J, Macaulay D, Birnbaum HG, Jarvis JL, Desai US, Page RL 2<sup>nd</sup>. *Telemed J E Health*. 2015 Jul 28. [Epub ahead of print]

Positive subjective measures in abuse liability studies and real-world nonmedical use: Potential impact of abuse-deterrent opioids on rates of nonmedical use and associated healthcare costs. White AG, LeCates J, Birnbaum HG, Cheng W, Roland CL, Mardekian J. *J Opioid Manag*. 2015 May-Jun;11(3):199-210. doi: 10.5055/jom.2015.0269.

The burden of undiagnosed opioid abuse among commercially insured individuals. Kirson NY, Shei A, Rice JB, Enloe CJ, Bodnar K, Birnbaum HG, Holly P, Ben-Joseph R. *Pain Med*. 2015 Apr 30. doi: 10.1111/pme.12768. [Epub ahead of print]

Economic outcomes among Medicare patients receiving bioengineered cellular technologies for treatment of diabetic foot ulcers. Rice JB, Desai U, Ristovska L, Cummings AK, Birnbaum HG, Skornicki M, Margolis DJ, Parsons NB. *J Med Econ*. 2015 Apr 22:1-10. [Epub ahead of print]

The economic impact of implementing a multiple inflammatory biomarker-based approach to identify, treat, and reduce cardiovascular risk. Penn MS, Yenikomshian MA, Cummings AK, Klemes A, Damron JM, Purvis S, Beidelschies M, Birnbaum HG. *J Med Econ*. 2015;18(7):483-91. doi: 10.3111/13696998.2015.1029490. Epub 2015 Apr 1.

Sources of prescription opioids among diagnosed opioid abusers. Shei A, Rice JB, Kirson NY, Bodnar K, Birnbaum HG, Holly P, Ben-Joseph R. *Curr Med Res Opin*. 2015 Apr;31(4):779-84. doi: 10.1185/03007995.2015.1016607. Epub 2015 Feb 24.

Impact of a telehealth and care management program for patients with chronic obstructive pulmonary disease. Au DH, Macaulay DS, Jarvis JL, Desai US, Birnbaum HG. *Ann Am Thorac Soc*. 2015 Mar;12(3):323-31. doi: 10.1513/AnnalsATS.201501-042OC.

Medical resource use and costs among pain patients with potential opioid-tolerability issues. Kirson NY, Shei A, Birnbaum HG, Ben-Joseph R, Michna E. *J Opioid Manag*. 2014 Sep-Oct;10(5):305-10. doi: 10.5055/jom.2014.0220.

Retrospective analysis of dose titration and serum testosterone level assessments in patients treated with topical testosterone. Muram D, Kaltenboeck A, Boytsov N, Hayes-Larson E, Ivanova J, Birnbaum HG, Swindle R. *Am J Mens Health*. 2014 Sep 30. pii: 1557988314551569. [Epub ahead of print]

The economic burden of diagnosed opioid abuse among commercially insured individuals. Rice JB, Kirson NY, Shei A, Enloe CJ, Cummings AK, Birnbaum HG, Holly P, Ben-Joseph R. *Postgrad Med*. 2014 Jul;126(4):53-8. doi: 10.3810/pgm.2014.07.2783.

Healthcare resource use and costs of privately insured patients who switch, discontinue, or persist on anti-muscarinic therapy for overactive bladder. Ivanova JI, Hayes-Larson E, Sorg RA, Birnbaum HG, Berner T. *J Med Econ*. 2014 Oct;17(10):741-50. doi: 10.3111/13696998.2014.941066. Epub 2014 Jul 22.

Societal economic benefits associated with an extended-release opioid with abuse-deterrent technology in the United States. Kirson NY, Shei A, White AG, Birnbaum HG, Ben-Joseph R, Rossiter LF, Michna E. *Pain Med*. 2014 Sep;15(9):1450-4. doi: 10.1111/pme.12489. Epub 2014 Jul 8.

Estimating the costs of opioid abuse and dependence from an employer perspective: a retrospective analysis using administrative claims data. Rice JB, Kirson NY, Shei A, Cummings AK, Bodnar K, Birnbaum HG, Ben-Joseph R. *Appl Health Econ Health Policy*. 2014 Aug;12(4):435-46. doi: 10.1007/s40258-014-0102-0.

Burden of venous leg ulcers in the United States. Rice JB, Desai U, Cummings AK, Birnbaum HG, Skornicki M, Parsons N. *J Med Econ*. 2014 May;17(5):347-56. doi: 10.3111/13696998.2014.903258. Epub 2014 Mar 24.

Use of prescription opioids with abuse-deterrent technology to address opioid abuse. Michna E, Kirson NY, Shei A, Birnbaum HG, Ben-Joseph R. *Curr Med Res Opin*. 2014 Aug;30(8):1589-98. doi: 10.1185/03007995.2014.915803. Epub 2014 Apr 24.

Medical cost savings associated with an extended-release opioid with abuse-deterrent technology in the U.S. Rossiter LF, Kirson NY, Shei A, White AG, Birnbaum HG, Ben-Joseph R, Michna E. *J Med Econ*. 2014 Feb 24. Epub 2014 March 7.

Costs after initiating saxagliptin, sulfonylurea, or sitagliptin in patients with T2DM. Anna Kaltenboeck, MA; Jasmina Ivanova, MS; Howard Birnbaum, PhD; Yana Yushkina, BA; Frances Schwiep, BA; Kelly Bell, PharmD; and Nina Thomas, MPH. Published online *The American Journal of Managed Care* 2014 June 20. [www.ajmc.com](http://www.ajmc.com)

Duloxetine use in employees with low back pain: Treatment patterns and direct and indirect costs. Ivanova JI, Birnbaum HG, Kantor E, Schiller M, Swindle RW. *Pain Med*. 2014 Jun;15(6):1015-26. doi: 10.1111/pme.12362. Epub 2014 Feb 15.

The prevalence and economic impact of prescription opioid-related side effects among patients with chronic noncancer pain. Ivanova JI, Birnbaum HG, Yushkina Y, Sorg RA, Reed J, Merchant S. *J Opioid Manag*. 2013 Jul-Aug;9(4):239-54. doi: 10.5055/jom.2013.0165.

Burden of diabetic foot ulcers for medicare and private insurers. Rice JB, Desai U, Cummings AK, Birnbaum HG, Skornicki M, Parsons NB. *Diabetes Care*. 2014 Mar;37(3):651-8. doi: 10.2337/dc13-2176. Epub 2013 Nov 1.

Systematic literature review and meta-analysis of the efficacy and safety of prescription opioids, including abuse-deterrent formulations, in non-cancer pain management. Michna E, Cheng WY, Korves C, Birnbaum H, Andrews R, Zhou Z, Joshi AV, Schaaf D, Mardekian J, Sheng M. *Pain Med.* 2014 Jan;15(1):79-92. doi: 10.1111/pme.12233. Epub 2013 Sep 23.

Effects of care management and telehealth: a longitudinal analysis using Medicare data. Baker LC, Macaulay DS, Sorg RA, Diener MD, Johnson SJ, Birnbaum HG. *J Am Geriatr Soc.* 2013 Sep;61(9):1560-7. doi: 10.1111/jgs.12407. Epub 2013 Sep 3. Erratum in: *J Am Geriatr Soc.* 2013 Nov;61(11):2062.

Costs of Parkinson's disease in a privately insured population. Johnson SJ, Kaltenboeck A, Diener M, Birnbaum HG, Grubb E, Castelli-Haley J, Siderowf AD. *Pharmacoeconomics.* 2013 Sep;31(9):799-806. doi: 10.1007/s40273-013-0075-0.

Evaluating the utility of existing patient-reported outcome scales in novel patient populations with pancreatic cancer, lung cancer, and myeloproliferative neoplasms using medicare current beneficiary survey data. Ivanova JI, Mytelka DS, Duh MS, Birnbaum HG, Cummings AK, San Roman AM, Price GL, Swindle RW. *Patient.* 2013;6(3):189-200. doi: 10.1007/s40271-013-0018-z.

Prescription opioid abuse: challenges and opportunities for payers. Katz NP, Birnbaum H, Brennan MJ, Freedman JD, Gilmore GP, Jay D, Kenna GA, Madras BK, McElhaney L, Weiss RD, White AG. *Am J Manag Care.* 2013 Apr;19(4):295-302.

Pre-diagnosis excess acute care costs in Alzheimer's patients among a US Medicaid population. Geldmacher DS, Kirson NY, Birnbaum HG, Eapen S, Kantor E, Cummings AK, Joish VN. *Appl Health Econ Health Policy.* 2013 Aug;11(4):407-13. doi: 10.1007/s40258-013-0038-9.

Implications of early treatment among Medicaid patients with Alzheimer's disease. Geldmacher DS, Kirson NY, Birnbaum HG, Eapen S, Kantor E, Cummings AK, Joish VN. *Alzheimers Dement.* 2013 May 2. pii: S1552-5260(13)00047-2. doi: 10.1016/j.jalz.2013.01.015. Epub 2013 May 2.

An economic model of Parkinson's disease: implications for slowing progression in the United States. Johnson SJ, Diener MD, Kaltenboeck A, Birnbaum HG, Siderowf AD. *Mov Disord.* 2013 Mar;28(3):319-26. doi: 10.1002/mds.25328. Epub 2013 Feb 12.

Matching-adjusted indirect comparison of adalimumab vs etanercept and infliximab for the treatment of psoriatic arthritis. Kirson NY, Rao S, Birnbaum HG, Kantor E, Wei RS, Cifaldi M. *J Med Econ.* 2013;16(4):479-89. doi: 10.3111/13696998.2013.768530. Epub 2013 Feb 7.

A model to identify patients at risk for prescription opioid abuse, dependence, and misuse. Rice JB, White AG, Birnbaum HG, Schiller M, Brown DA, Roland CL. *Pain Med.* 2012 Sep;13(9):1162-73. doi: 10.1111/j.1526-4637.2012.01450.x. Epub 2012 Jul 30.

The direct and indirect costs among U.S. privately insured employees with hypogonadism. Kaltenboeck A, Foster S, Ivanova J, Diener M, Bergman R, Birnbaum H, Kinchen K, Swindle R. *J Sex Med.* 2012 Sep;9(9):2438-47. doi: 10.1111/j.1743-6109.2012.02810.x. Epub 2012 Jun 27.

Duloxetine use in chronic low back pain: treatment patterns and costs. Ivanova JI, Birnbaum HG, Kantor E, Schiller M, Swindle RW. *Pharmacoeconomics.* 2012 Jul 1;30(7):595-609. doi: 10.2165/11598130-000000000-00000.

Healthcare costs and workloss burden of patients with chemotherapy-associated peripheral neuropathy in breast, ovarian, head and neck, and nonsmall cell lung cancer. Pike CT, Birnbaum HG, Muehlenbein CE, Pohl GM, Natale RB. *Chemother Res Pract*. 2012;2012:913848. Epub 2012 Mar 14.

Changes in Utilization and Costs for Patients with Rheumatoid Arthritis, 1997 to 2006. Birnbaum HG, Pike C, Banerjee R, Waldman T, Cifaldi M. *Pharmacoeconomics*. 2012 Apr;30(4):323-36. doi: 10.2165/11589470-000000000-00000.

Impact of medication adherence to disease-modifying drugs on severe relapse, and direct and indirect costs among employees with multiple sclerosis in the US. Ivanova JI, Bergman RE, Birnbaum HG, Phillips AL, Stewart M, Meletiche DM. *J Med Econ*. 2012;15(3):601-9. doi: 10.3111/13696998.2012.667027. Epub 2012 Mar 1.

Direct and indirect costs associated with Dupuytren's contracture. Macaulay D, Ivanova J, Birnbaum H, Sorg R, Skodny P. *J Med Econ*. 2012;15(4):664-71. doi: 10.3111/13696998.2012.670678. Epub 2012 Mar 21.

Effect of asthma exacerbations on health care costs among asthmatic patients with moderate and severe persistent asthma. Ivanova JI, Bergman R, Birnbaum HG, Colice GL, Silverman RA, McLaurin K.J *Allergy Clin Immunol*. 2012 May;129(5):1229-35. Epub 2012 Feb 11.

Real-World Role of Tricyclic Antidepressants in the Treatment of Fibromyalgia. Reed C, Birnbaum HG, Ivanova JI, Schiller M, Waldman T, Mullen RE, Swindle R. *Pain Pract*. 2012 Jan 9. doi: 10.1111/j.1533-2500.2011.00526.x. Epub 2012 January 9.

Direct costs and survival of medicare beneficiaries with early and advanced Parkinson's disease. Kaltenboeck A, Johnson SJ, Davis MR, Birnbaum HG, Carroll CA, Tarrant ML, Siderowf AD. *Parkinsonism Relat Disord*. 2012 May;18(4):321-6. doi: 10.1016/j.parkreldis.2011.11.015. Epub 2011 Dec 16.

Direct and indirect costs of patients treated with extended-release oxycodone HCl or controlled-release oxycodone HCl. Kirson NY, White AG, Birnbaum HG, Schiller M, Waldman T, Peterson K, Ben-Joseph RH, Berner T, Summers KH. *J Med Econ*. 2012;15(1):87-95. Epub 2011 Oct 28.

Early retirement and income loss in patients with early and advanced Parkinson's disease. Johnson S, Davis M, Kaltenboeck A, Birnbaum H, Grubb E, Tarrant M, Siderowf A. *Appl Health Econ Health Policy*. 2011 Nov 1;9(6):367-76. doi: 10.2165/11596900-000000000-00000.

Integrated telehealth and care management program for Medicare beneficiaries with chronic disease linked to savings. Baker LC, Johnson SJ, Macaulay D, Birnbaum H. *Health Aff (Millwood)*. 2011 Sep;30(9):1689-97.

Excess costs associated with patients with chronic thromboembolic pulmonary hypertension in a US privately insured population. Kirson NY, Birnbaum HG, Ivanova JI, Waldman T, Joish V, Williamson T. *Appl Health Econ Health Policy*. 2011 Nov 1;9(6):377-87. doi: 10.2165/11592440-000000000-00000.

Excess costs associated with patients with pulmonary arterial hypertension in a US privately insured population. Kirson NY, Birnbaum HG, Ivanova JI, Waldman T, Joish V, Williamson T. *Appl Health Econ Health Policy*. 2011 Sep 1;9(5):293-303. doi: 10.2165/11592430-000000000-00000.

Cost of post-traumatic stress disorder vs. major depressive disorder among patients covered by Medicaid or private insurance. Ivanova JI, Birnbaum HG, Chen L, Duhig AM, Dayoub EJ, Kantor ES, Schiller MB, Phillips GA. *Am J Manag Care*. 2011 Aug 1;17(8):e314-23.

Prevalence of pulmonary arterial hypertension and chronic thromboembolic pulmonary hypertension in the United States. Kirson NY, Birnbaum HG, Ivanova JI, Waldman T, Joish V, Williamson T. *Curr Med Res Opin*. 2011 Sep;27(9):1763-8. Epub 2011 Jul 27.

Real-world practice patterns, health-care utilization, and costs in patients with low back pain: the long road to guideline-concordant care. Ivanova JI, Birnbaum HG, Schiller M, Kantor E, Johnstone BM, Swindle RW. *Spine J*. 2011 Jul;11(7):622-32. Epub 2011 May 20.

Societal costs of prescription opioid abuse, dependence, and misuse in the United States. Birnbaum HG, White AG, Schiller M, Waldman T, Cleveland JM, Roland CL. *Pain Med*. 2011 Apr;12(4):657-67. doi: 10.1111/j.1526-4637.2011.01075.x. Epub 2011 Mar 10.

Increased olanzapine discontinuation and health care resource utilization following a Medicaid policy change. Signorovitch J, Birnbaum H, Ben-Hamadi R, Yu AP, Kidolezi Y, Kelley D, Phillips G, Lawson A, Ball DE. *J Clin Psychiatry*. 2011 Jun;72(6):787-94. Epub 2011 Jan 25.

Prevalence rates and costs of metabolic syndrome and associated risk factors using employees' integrated laboratory data and health care claims. Birnbaum HG, Mattson ME, Kashima S, Williamson TE. *J Occup Environ Med*. 2011 Jan;53(1):27-33.

Physicians' decisions to prescribe antidepressant therapy in older patients with depression in a US managed care plan. Ivanova JI, Bienfait-Beuzon C, Birnbaum HG, Connolly C, Emani S, Sheehy M. *Drugs Aging*. 2011 Jan 1;28(1):51-62. doi: 10.2165/11539900-000000000-00000.

Prevalence and costs of osteoporotic patients with subsequent non-vertebral fractures in the US. Pike CT, Birnbaum HG, Schiller M, Swallow E, Burge RT, Edgell ET. *Osteoporos Int*. 2011 Oct;22(10):2611-21. doi: 10.1007/s00198-010-1494-9. Epub 2010 Nov 25.

Perspectives on comparative effectiveness research: views from diverse constituencies. Nellesen D, Birnbaum HG, Greenberg PE. *Pharmacoeconomics*. 2010;28(10):789-98. doi: 10.2165/11535790-000000000-00000.

Introducing perspectives on comparative effectiveness research. Birnbaum HG, Greenberg PE. *Pharmacoeconomics*. 2010;28(10):787-8. doi: 10.2165/11535820-000000000-00000.

Direct and indirect costs of employees with treatment-resistant and non-treatment-resistant major depressive disorder. Ivanova JI, Birnbaum HG, Kidolezi Y, Subramanian G, Khan SA, Stensland MD. *Curr Med Res Opin*. 2010 Oct;26(10):2475-84.

Cardiovascular and economic outcomes after initiation of atorvastatin versus simvastatin in an employed population stratified by cardiovascular risk. Simpson RJ Jr, Signorovitch J, Ramakrishnan K, Ivanova J, Birnbaum H, Kuznik A. *Am J Ther*. 2011 Nov;18(6):436-48.

Descriptive analysis of Medicaid patients with postherpetic neuralgia treated with lidocaine patch 5%. Kirson NY, Ivanova JI, Birnbaum HG, Wei R, Kantor E, Amy Puenpatom R, Ben-Joseph RH, Summers KH. *J Med Econ*. 2010;13(3):472-81.

Comparing healthcare costs of Medicaid patients with postherpetic neuralgia (PHN) treated with lidocaine patch 5% versus gabapentin or pregabalin. Kirson NY, Ivanova JI, Birnbaum HG, Wei R, Kantor E, Puenpatom RA, Ben-Joseph RH, Summers KH. *J Med Econ.* 2010;13(3):482-91.

Economic burden of epilepsy among the privately insured in the US. Ivanova JI, Birnbaum HG, Kidolezi Y, Qiu Y, Mallett D, Caleo S. *Pharmacoeconomics.* 2010;28(8):675-85. doi: 10.2165/11535570-000000000-00000.

Clinical outcomes and medical care costs among medicare beneficiaries receiving therapy for peripheral arterial disease. Jaff MR, Cahill KE, Yu AP, Birnbaum HG, Engelhart LM. *Ann Vasc Surg.* 2010 Jul;24(5):577-87.

Volume of prescription opioids used nonmedically in the United States. Katz NP, Birnbaum HG, Castor A. *J Pain Palliative Care Pharmacotherapy.* 2010 Jun;24(2):141-4.

Economic burden of privately insured non-vertebral fracture patients with osteoporosis over a 2-year period in the US. Pike C, Birnbaum HG, Schiller M, Swallow E, Burge RT, Edgell ET. *Osteoporos Int.* 2011 Jan;22(1):47-56. doi: 10.1007/s00198-010-1267-5. Epub 2010 May 20.

Direct and indirect costs of non-vertebral fracture patients with osteoporosis in the US. Pike C, Birnbaum HG, Schiller M, Sharma H, Burge R, Edgell ET. *Pharmacoeconomics.* 2010;28(5):395-409. doi: 10.2165/11531040-000000000-00000.

Assessing the relationship between compliance with antidepressant therapy and employer costs among employees in the United States. Birnbaum HG, Ben-Hamadi R, Kelley D, Hsieh M, Seal B, Kantor E, Cremieux PY, Greenberg PE. *J Occup Environ Med.* 2010 Feb;52(2):115-24.

Age differences in the prevalence and co-morbidity of DSM-IV major depressive episodes: results from the WHO World Mental Health Survey Initiative. Kessler RC, Birnbaum HG, Shahly V, Bromet E, Hwang I, McLaughlin KA, Sampson N, Andrade LH, de Girolamo G, Demyttenaere K, Haro JM, Karam AN, Kostyuchenko S, Kovess V, Lara C, Levinson D, Matschinger H, Nakane Y, Browne MO, Ormel J, Posada-Villa J, Sagar R, Stein DJ. *Depress Anxiety.* 2010 Apr;27(4):351-64.

Direct and indirect costs associated with epileptic partial onset seizures among the privately insured in the United States. Ivanova JI, Birnbaum HG, Kidolezi Y, Qiu Y, Mallett D, Caleo S. *Epilepsia.* 2010 May;51(5):838-44. Epub 2009 Dec 7.

Analytic models to identify patients at risk for prescription opioid abuse. White AG, Birnbaum HG, Schiller M, Tang J, Katz NP. *Am J Manag Care.* 2009 Dec;15(12):897-906.

Cardiovascular and economic outcomes after initiation of lipid-lowering therapy with atorvastatin vs simvastatin in an employed population. Simpson RJ Jr, Signorovitch J, Birnbaum H, Ivanova J, Connolly C, Kidolezi Y, Kuznik A. *Mayo Clin Proc.* 2009 Dec;84(12):1065-72.

Societal cost of rheumatoid arthritis patients in the US. Birnbaum H, Pike C, Kaufman R, Marynchenko M, Kidolezi Y, Cifaldi M. *Curr Med Res Opin.* 2010 Jan;26(1):77-90.

Direct costs associated with initiating NPH insulin versus glargine in patients with type 2 diabetes: a retrospective database analysis. Lee LJ, Yu AP, Johnson SJ, Birnbaum HG, Atanasov P, Buesching DP, Jackson JA, Davidson JA. *Diabetes Res Clin Pract.* 2010 Jan;87(1):108-16. Epub 2009 Nov 5.

Employer model of workplace impacts of anti-TNF therapy for rheumatoid arthritis. Birnbaum H, Pike C, Kaufman R, Cifaldi M. *J Occup Environ Med.* 2009 Oct;51(10):1167-76.

The cost of disability and medically related absenteeism among employees with multiple sclerosis in the US. Ivanova JI, Birnbaum HG, Samuels S, Davis M, Phillips AL, Meletiche D. *Pharmacoeconomics.* 2009;27(8):681-91. doi: 10.2165/11314700-000000000-00000.

Determinants of direct cost differences among US employees with major depressive disorders using antidepressants. Birnbaum HG, Ben-Hamadi R, Greenberg PE, Hsieh M, Tang J, Reygrobellet C. *Pharmacoeconomics.* 2009;27(6):507-17. doi: 10.2165/00019053-200927060-00006.

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

Development of a budget-impact model to quantify potential cost savings from prescription opioids designed to deter abuse or ease of extraction. White AG, Birnbaum HG, Rothman DB, Katz N. *Appl Health Econ Health Policy.* 2009;7(1):61-70. doi: 10.2165/00148365-200907010-00006.

Comparison of health care use and costs in newly diagnosed and established patients with fibromyalgia. White LA, Robinson RL, Yu AP, Kaltenboeck A, Samuels S, Mallett D, Birnbaum HG. *J Pain.* 2009 Sep;10(9):976-83. Epub 2009 Jun 24.

Age differences in major depression: results from the National Comorbidity Survey Replication (NCS-R). Kessler RC, Birnbaum H, Bromet E, Hwang I, Sampson N, Shahly V. *Psychol Med.* 2010 Feb;40(2):225-37. doi: 10.1017/S0033291709990213. Epub 2009 Jun 17.

Resource utilization and costs of schizophrenia patients treated with olanzapine versus quetiapine in a Medicaid population. Yu AP, Atanasov P, Ben-Hamadi R, Birnbaum H, Stensland MD, Philips G. *Value Health.* 2009 Jul-Aug;12(5):708-15.

Antidepressant treatment patterns and costs among US employees. Birnbaum H, Greenberg PE, Tang J, Hsieh M, Wu EQ, Amand C, Ben-Hamadi R. *J Med Econ.* 2009 Mar;12(1):36-45.

Workplace impacts of anti-TNF therapies in rheumatoid arthritis: review of the literature. Birnbaum H, Shi L, Pike C, Kaufman R, Sun P, Cifaldi M. *Expert Opin Pharmacotherapy.* 2009 Feb;10(2):255-69. Review.

Economic impact of multiple sclerosis disease-modifying drugs in an employed population: direct and indirect costs. Birnbaum HG, Ivanova JI, Samuels S, Davis M, Cremieux PY, Phillips AL, Meletiche D. *Curr Med Res Opin.* 2009 Apr;25(4):869-77.

Comparing the treatment patterns of patients with schizophrenia treated with olanzapine and quetiapine in the Pennsylvania Medicaid population. Yu AP, Ben-Hamadi R, Birnbaum HG, Atanasov P, Stensland MD, Philips G. *Curr Med Res Opin.* 2009 Mar;25(3):755-64.

Adherence to inhaled corticosteroid use and local adverse events in persistent asthma. Ivanova JI, Birnbaum HG, Hsieh M, Yu AP, Seal B, van der Molen T, Emani S, Rosiello RA, Colice GL. *Am J Manag Care.* 2008 Dec;14(12):801-9.

Direct and indirect costs of pain therapy for osteoarthritis in an insured population in the United States. White AG, Birnbaum HG, Janagap C, Buteau S, Schein J. *J Occup Environ Med.* 2008 Sep;50(9):998-1005.

Comparative and interactive effects of depression relative to other health problems on work performance in the workforce of a large employer. Kessler R, White LA, Birnbaum H, Qiu Y, Kidolezi Y, Mallett D, Swindle R. *J Occup Environ Med.* 2008 Jul;50(7):809-16.

Retrospective claims data analysis of dosage adjustment patterns of TNF antagonists among patients with rheumatoid arthritis. Wu E, Chen L, Birnbaum H, Yang E, Cifaldi M. *Curr Med Res Opin.* 2008 Aug;24(8):2229-40. Epub 2008 Jun 23.

Costs and resource use of mild persistent asthma patients initiated on controller therapy. Colice GL, Yu AP, Ivanova JI, Hsieh M, Birnbaum HG, Lage MJ, Brewster C. *J Asthma.* 2008 May;45(4):293-9.

Direct and indirect costs among employees with diabetic retinopathy in the United States. Lee LJ, Yu AP, Cahill KE, Oglesby AK, Tang J, Qiu Y, Birnbaum HG. *Curr Med Res Opin.* 2008 May;24(5):1549-59. Epub 2008 Apr 15.

Employees with fibromyalgia: medical comorbidity, healthcare costs, and work loss. White LA, Birnbaum HG, Kaltenboeck A, Tang J, Mallett D, Robinson RL. *J Occup Environ Med.* 2008 Jan;50(1):13-24.

Actual versus predicted first year utilization patterns of teriparatide in patients with employer-sponsored health insurance. Meadows ES, Rousculp M, Sasser AC, Birnbaum HG, Moyneur E, Mallet D, Johnston JA. *Curr Med Res Opin.* 2007 Dec;23(12):3215-22.

Health care costs of adults treated for attention-deficit disorder/hyperactivity disorder who received alternative drug therapies. Wu EQ, Birnbaum HG, Zhang HF, Ivanova JI, Yang E, Mallet D. *J Manag Care Pharm.* 2007 Sept;13(7):561-9.

Prevalence, referral patterns, testing, and surgery in aortic valve disease: leaving women and elderly patients behind? Bach DS, Radeva JI, Birnbaum HG, Fournier AA, Tuttle EG. *J Heart Valve Dis.* 2007 Jul;16(4):362-9.

Short-term economic impact of body weight change among patients with type 2 diabetes treated with antidiabetic agents: analysis using claims, laboratory, and medical record data. Yu AP, Wu EQ, Birnbaum HG, Emani S, Fay M, Pohl G, Wintle M, Yang E, Oglesby A. *Curr Med Res Opin.* 2007 Sep;23(9):2157-69.

- Use of inhaled corticosteroids and healthcare costs in mild persistent asthma. Colice G, Wu EQ, Birnbaum H, Daher M, Maryna BM. *J Asthma*. 2007 Jul-Aug;44(6):479-83.
- Retrospective economic and outcomes analysis using non-US databases: a review. Shi L, Wu EQ, Hodges M, Yu A, Birnbaum H. *PharmacoEconomics*. 2007;25(7):563-76.
- Costs of care for patients with rheumatoid arthritis receiving TNF-antagonist therapy using claims data. Wu E, Chen L, Birnbaum H, Yang E, Cifaldi M. *Curr Med Res Opin*. 2007 Aug;23(8):1749-59.
- Considering the costs of bipolar depression. Kessler RC, Akiskal HS, Ames M, Birnbaum H, Greenberg PE, Hirschfeld RM, Wang PS. *Behav Healthc*. 2007 Jan;27(1):45-7.
- Foundations of opioid risk management. Katz NP, Adams EH, Benneyan JC, Birnbaum HG, Budman SH, Buzzeo RW, Carr DB, Cicero TJ, Gourlay D, Inciardi JA, Joranson DE, Kesslick J, Lande SD. *Clin J Pain*. 2007 Feb;23(2):103-18.
- Annual costs associated with diagnosis of uterine leiomyomata. Hartmann KE, Birnbaum H, Ben-Hamadi R, Wu EQ, Farrell MH, Spalding J, Stang P. *Obstet Gynecol*. 2006 Oct;108(4):930-7.
- Estimated costs of prescription opioid analgesic abuse in the United States in 2001: a societal perspective. Birnbaum HG, White AG, Reynolds JL, Greenberg PE, Zhang M, Vallow S, Schein JR, Katz NP. *Clin J Pain*. 2006 Oct;22(8):667-76.
- Development of a COPD severity score. Wu EQ, Birnbaum HG, Cifaldi M, Kang Y, Mallet D, Colice G. *Curr Med Res Opin*. 2006 Sep;22(9):1679-87.
- Prevalence and effects of mood disorders on work performance in a nationally representative sample of U.S. workers. Kessler RC, Akiskal HS, Ames M, Birnbaum H, Greenberg P, Hirschfeld RM, Jin R, Merikangas KR, Simon GE, Wang PS. *Am J Psychiatry*. 2006 Sep;163(9):1561-8.
- Annual prevalence of diagnosed schizophrenia in the USA: a claims data analysis approach. Wu EQ, Shi L, Birnbaum H, Hudson T, Kessler R. *Psychol Med*. 2006 Nov;36(11):1535-40. Epub 2006 Aug 15.
- Healthcare and workloss costs associated with patients with persistent asthma in a privately insured population. Colice G, Wu EQ, Birnbaum H, Daher M, Marynchenko MB, Varghese S. *J Occup Environ Med*. 2006 Aug;48(8):794-802.
- Cost-effectiveness of duloxetine versus routine treatment for U.S. patients with diabetic peripheral neuropathic pain. Wu EQ, Birnbaum HG, Mareva MN, Le TK, Robinson RL, Rosen A, Gelwicks S. *J Pain*. 2006 Jun;7(6):399-407.
- A retrospective claims database analysis to assess patterns of interstitial cystitis diagnosis. Wu EQ, Birnbaum H, Kang YJ, Parece A, Mallett D, Taitel H, Evans RJ. *Curr Med Res Opin*. 2006 Mar;22(3):495-500.
- Generic competition in the U.S. pharmaceutical industry. Saha A, Grabowski H, Birnbaum H, Greenberg PE, Bizan O. *International Journal of the Economics of Business*. 2006 Feb;13(1):15-38.

Interstitial cystitis: cost, treatment and co-morbidities in an employed population. Wu EQ, Birnbaum H, Mareva M, Parece A, Huang Z, Mallett D, Taitel H. *Pharmacoeconomics*. 2006;24(1):55-65.

A regulatory perspective on productivity claims: implications for future productivity research. Stang PE, Greenberg PE, Birnbaum HG, Kessler RC, Hoffman L, Duh MS. *Health and Work Productivity: Emerging Issues in Research and Policy*, ed. Ronald Kessler and Paul Stang, University of Chicago Press. 2006. pp. 242-252.

Linking administrative claims data with archival productivity measures to inform employer decision making. Greenberg PE, Birnbaum H. *Health and Work Productivity: Emerging Issues in Research and Policy*, ed. Ronald Kessler and Paul Stang, University of Chicago Press. 2006. pp. 29-53.

Economic burden and co-morbidities of atrial fibrillation in a privately insured population. Wu EQ, Birnbaum HG, Mareva M, Tuttle E, Castor AR, Jackman W, Ruskin J. *Curr Med Res Opin*. 2005 Oct;21(10):1693-9.

The economic burden of schizophrenia in the United States in 2002. Wu EQ, Birnbaum HG, Shi L, Ball DE, Kessler RC, Moulis M, Aggarwal J. *J Clin Psychiatry*. 2005 Sep;66(9):1122-9.

Economic burden of illness for employees with painful conditions. White AG, Birnbaum HG, Mareva MN, Henckler AE, Grossman P, Mallett DA. *J Occup Environ Med*. 2005 Sep;47(9):884-92.

Assessing the economic impact of chronic conditions in postmenopausal women. Sasser AC, Taylor M, Birnbaum HG, Schoenfeld MJ, Oster EF, Rousculp M. *Expert Opin Pharmacother*. 2005 Sep;6(11):1803-14.

The prevalence and effects of adult attention-deficit/hyperactivity disorder on work performance in a nationally representative sample of workers. Kessler RC, Adler L, Ames M, Barkley RA, Birnbaum H, Greenberg P, Johnston JA, Spencer T, Ustün TB. *J Occup Environ Med*. 2005 Jun;47(6):565-72.

The prevalence and correlates of non-affective psychosis in the National Comorbidity Survey Replication (NCS-R). Kessler RC, Birnbaum H, Demler O, Falloon IR, Gagnon E, Guyer M, Howes MJ, Kendler KS, Shi L, Walters E, Wu EQ. *Biol Psychiatry*. 2005 Oct 15;58(8):668-76. Epub 2005 Jul 14.

Direct costs of opioid abuse in an insured population in the United States. White AG, Birnbaum HG, Mareva MN, Daher M, Vallow S, Schein J, Katz N. *J Manag Care Pharm*. 2005 Jul-Aug;11(6):469-79.

Economic burden of osteoporosis, breast cancer, and cardiovascular disease among postmenopausal women in an employed population. Sasser AC, Rousculp MD, Birnbaum HG, Oster EF, Lufkin E, Mallett D. *Women's Health Issues*. 2005 May-Jun;15(3):97-108.

Employees with overactive bladder: work loss burden. Wu EQ, Birnbaum H, Marynchenko M, Mareva M, Williamson T, Mallett D. *J Occup Environ Med*. 2005 May;47(5):439-46.

The economic burden of depression in the US: societal and patient perspectives. Greenberg PE, Birnbaum HG. *Expert Opin Pharmacotherapy*. 2005 Mar;6(3):369-76.

Costs of attention deficit-hyperactivity disorder (ADHD) in the US: excess costs of persons with ADHD and their family members in 2000. Birnbaum HG, Kessler RC, Lowe SW, Secnik K, Greenberg PE, Leong SA, Swensen AR. *Curr Med Res Opin*. 2005 Feb;21(2):195-206.

Friction-cost method as an alternative to the human-capital approach in calculating indirect costs. Birnbaum H. *Pharmacoeconomics*. 2005;23(2):103-4.

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

Incidence and costs of accidents among attention-deficit/hyperactivity disorder patients. Swensen A, Birnbaum HG, Ben Hamadi R, Greenberg P, Cremieux PY, Secnik K. *J Adolesc Health*. 2004 Oct;35(4):346.e1-9.

Depression and fibromyalgia: treatment and cost when diagnosed separately or concurrently. Robinson RK, Birnbaum HG, Morley MA, Sisitsky T, Greenberg PE, Wolfe F. *J Rheumatol*. 2004 Aug;31(8):1621-9.

Treatment costs of community-acquired pneumonia in an employed population. Colice GL, Morley MA, Asche C, Birnbaum HG. *Chest*. 2004 Jun;125(6):2140-5.

“Money Can’t Buy Happiness...” Greenberg PE, Birnbaum H, Kessler RC. *Business & Health*. April 15, 2004.

Cost of stress urinary incontinence: a claims data analysis. Birnbaum HG, Leong SA, Oster EF, Kinchen K, Sun P. *Pharmacoeconomics*. 2004;22(2):95-105.

Economic implications of treatment-resistant depression among employees. Greenberg P, Corey-Lisle PK, Birnbaum H, Marynchenko M, Claxton A. *Pharmacoeconomics*. 2004;22(6):363-73.

Administrative claims data: a valuable tool in pharmaceutical litigation. Greenberg PE, Birnbaum HG. *FDLI Update Magazine*. 2004;1:12-14.

What’s so different about anxiety disorders (such as phobias)? Greenberg PE, Birnbaum HG, Sisitsky T. *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 depression in the United States: how did it change between 1990 and 2000? Greenberg PE, Kessler RC, Birnbaum HG, Leong SA, Lowe SW, Berglund PA, Corey-Lisle PK. *J Clin Psychiatry*. 2003 Dec;64(12):1465-75.

Attention-deficit/hyperactivity disorder: increased costs for patients and their families. Swensen AR, Birnbaum HG, Secnik K, Marynchenko M, Greenberg P, Claxton A. *J Am Acad Child Adolesc Psychiatry*. 2003 Dec;42(12):1415-23.

Lifetime medical costs for women: cardiovascular disease, diabetes and stress urinary incontinence. Birnbaum H, Leong S, Kabra A. *Womens Health Issues*. 2003 Nov-Dec;13(6):204-13.

Economic consequences of not recognizing bipolar disorder patients: a cross-sectional descriptive analysis. Birnbaum HG, Shi L, Dial E, Oster EF, Greenberg PE, Mallet DA. *J Clin Psychiatry*. 2003 Oct;64(10):1201-9.

Economic cost and epidemiological characteristics of patients with fibromyalgia claims. Robinson RL, Birnbaum HG, Morley MA, Sisitsky T, Greenberg PE, Claxon AJ. *J Rheumatol*. 2003 Jun;30(6):1318-25.

Economic impact of olanzapine plus fluoxetine combination therapy among patients treated for depression: a pilot study. Corey-Lisle PK, Birnbaum H, Greenberg P, Marynchenko M, Dube S. *Psychopharmacol Bull*. 2003 Summer;37(3):90-8.

The economic consequences of irritable bowel syndrome: a US employer perspective. Leong SA, Barghout V, Birnbaum HG, Thibeault CE, Ben-Hamadi R, Frech F, Ofman JJ. *Arch Intern Med*. 2003 Apr 28;163(8):929-35.

The economics of women and depression: an employer perspective. Birnbaum HG, Leong SA, Greenberg PE. Summit on Women and Depression. Proceedings of a conference sponsored by the American Psychological Association and the National Institute of Mental Health, *Journal of Affective Disorders*, 2003 Mar;74(1):15-22.

The relationship between technology availability and health care spending. Baker L, Birnbaum H, Geppert J, Mishol D, Moyneur E. *Health Aff (Millwood)*. 2003 Jul-Dec;Suppl Web Exclusives:W3:537-51.

Lower respiratory tract infections: impact on the workplace. Birnbaum H, Morley M, Leong S, Greenberg P, Colice G. *Pharmacoeconomics*. 2003;21(10):749-59.

The economic burden of depression with painful symptoms. Greenberg PE, Leong SA, Birnbaum HG, Robinson RL. *J Clin Psychiatry*. 2003;64 Suppl 7:17-23.

Economic burden of respiratory infections in an employed population. Birnbaum HG, Morley M, Greenberg PE, Colice GL. *Chest*. 2002 Aug;122(2):603-11.

Identification of a claims data "signature" and economic consequences for treatment-resistant depression. Corey-Lisle PK, Birnbaum HG, Greenberg PE, Marynchenko MB, Claxton AJ. *J Clin Psychiatry*. 2002 Aug;63(8):717-26.

Direct and indirect costs of asthma to an employer. Birnbaum HG, Berger WE, Greenberg PE, Holland M, Auerbach R, Atkins KM, Wanke LA. *J Allergy Clin Immunol*. 2002 Feb;109(2):264-70.

Productivity and medical costs of diabetes in a large employer population. Ramsey S, Summers KH, Leong SA, Birnbaum HG, Kemner JE, Greenberg P. *Diabetes Care*. 2002 Jan;25(1):23-9.

Economic burden of pneumonia in an employed population. Birnbaum HG, Morley M, Greenberg PE, Cifaldi M, Colice GL. *Arch Intern Med*. 2001 Dec 10-24;161(22):2725-31.

Identification of diabetes patients using claims data: an economic analysis. Summers KH, Leong SA, Greenberg PE, Birnbaum HG, Kemner JE, Ramsey S. *Drug Benefit Trends*. 2001 Dec:28-33.

Assessing the economic impact of psychiatric disorders: where to begin? Greenberg PE, Leong SA, Birnbaum HG. *Expert Opin Pharmacotherapy*. 2001 Apr;2(4):641-52.

Impact of illness and its treatment on workplace costs: regulatory and measurement issues. Greenberg PE, Birnbaum HG, Kessler RC, Morgan M, Stang P. *J Occup Environ Med.* 2001 Jan;43(1):56-63.

Depression and work productivity: the comparative costs of treatment versus nontreatment. Simon GE, Barber C, Birnbaum HG, Frank RG, Greenberg PE, Rose RM, Wang PS, Kessler RC. *J Occup Environ Med.* 2001 Jan;43(1):2-9. Review.

Cost of depression: current assessment and future directions. Greenberg PE, Leong SA, Birnbaum HG. *Expert Review of Pharmacoeconomics & Outcomes Research.* 2001;1(1):69-76.

“Pharmaceutical Spending and Health Outcomes in the United States?” Cremieux PY, Ouellette P, Meuilleur M, Leong SA, Greenberg PE, Birnbaum H. *Investing in Health: The Social and Economic Benefits of HealthCare Innovation*, ed. Kent Summers and Irene Farquhar. Elsevier Science Ltd., 2001; Volume 14: 59-76.

The costs of cancer to a major employer in the United States: a case-control analysis. Barnett A, Birnbaum H, Cremieux PY, Fendrick AM, Slavin M. *Am J Manag Care.* 2000 Nov;6(11):1243-51.

The impact of antidepressant use on social functioning: reboxetine versus fluoxetine. Venditti LN, Arcelus A, Birnbaum H, Greenberg P, Barr CE, Rowland C, Williamson T. *Int Clin Psychopharmacology.* 2000 Sep;15(5):279-89.

Direct and indirect costs of rheumatoid arthritis to an employer. Birnbaum HG, Barton M, Greenberg PE, Sisitsky T, Auerbach R, Wanke LA, Buatti MC. *J Occup Environ Med.* 2000 Jun;42(6):588-96.

Savings in direct medical costs from the use of tobramycin solution for inhalation in patients with cystic fibrosis. LeLorier J, Perreault S, Birnbaum H, Greenberg P, Sheehy O. *Clin Ther.* 2000 Jan;22(1):140-51.

Understanding the pharmacoeconomic profile of cancer. Cremieux PY, Greenberg PE, Birnbaum H. *ONE: Oncology Economics.* 2000;1(10):36-9.

The workplace burden of depression: underlying causes, recent empirical findings, and future directions. Greenberg PE, Birnbaum HG. *TEN: The Economics of Neuroscience.* 2000;2(6):37-40.

Management of major depression in the workplace: impact on employee work loss. Birnbaum HG, Greenberg PE, Cremieux PY, Kessler RC. *Disease Management & Health Outcomes.* 2000;7(3):163-71.

Pharmacoeconomics and health policy. Current applications and prospects for the future. Greenberg PE, Arcelus A, Birnbaum HG, Cremieux PY, LeLorier J, Ouellette P, Slavin MB. *Pharmacoeconomics.* 1999 Nov;16(5 Pt 1):425-32.

Depression in the workplace: effects on short-term disability. Kessler RC, Barber C, Birnbaum HG, Frank RG, Greenberg PE, Rose RM, Simon GE, Wang P. *Health Aff (Millwood).* 1999 Sep-Oct;18(5):163-71.

Using healthcare claims data for outcomes research and pharmacoeconomic analyses. Birnbaum HG, Cremieux PY, Greenberg PE, LeLorier J, Ostrander JA, Venditti L. *Pharmacoeconomics.* 1999 Jul;16(1):1-8.

Tackling costs one disease at a time. Birnbaum HG, Greenberg PE, Barton M, Cremieux PY, Slavin MB, D'Souza F, Auerbach B. *Bus Health* 1999 May;17(5):31-7.

Workplace burden of depression: case study in social functioning using employer claims data. Birnbaum HG, Greenberg PE, Barton M, Kessler RC, Rowland C, Williamson T. *Drug Benefit Trends*. 1999;11(8):6-12.

The home infusion therapy/relative benefit index: summary of an analysis using insurance claims data. Birnbaum HG, Tang M. *Med Care*. 1998 May;36(5):757-65.

Retiree health costs demand attention. Birnbaum HG, Reilly H. *Bus Health*. 1998 March;5(5).

Savings estimate for a Medicare insured group. Birnbaum H, Holland SK, Lenhart G, Reilly HL, Hoffman K, Pardo DP. *Health Care Financ Rev*. 1991 Summer;12(4):39-48.

Impact of the New York Long-Term Home Health Care Program. Gaumer GL, Birnbaum H, Pratter F, Burke R, Franklin S, Ellingson-Otto K. *Med Care*. 1986 Jul;24(7):641-53.

An alternative in terminal care: results of the National Hospice Study. Greer DS, Mor V, Morris JN, Sherwood S, Kidder D, Birnbaum H. *J Chronic Dis*. 1986;39(1):9-26.

An Alternative in Terminal Care: Results of the National Advice on Hospice Care for Benefits Design. Birnbaum HG. *Bus Health*. 1985 Jun;2(7).

What does hospice cost? Birnbaum HG, Kidder D. *Am J Public Health*. 1984 Jul;74(7):689-97.

"When Can a Medicare Insured Group (MIG) Succeed?" *Inquiry* 1984.

Implementing community-based long-term care: experience of New York's Long-Term Home Health Care Program. Birnbaum H, Burke R, Swearingen C, Dunlop B. *Gerontologist*. 1984 Aug;24(4):380-6.

Managing programs for the elderly: design of a social information systems. Birnbaum H, Burke R, Pratter F. *Health Care Financ Rev*. 1983 Winter;5(2):11-23.

Medicare legislation for hospice care: implications of national hospice study data. Mor V, Birnbaum H. *Health Aff (Millwood)*. 1983 Summer;2(2):80-90.

Home care in hospices. Birnbaum H, Mor V, Greer DS. *Caring*. 1983 Jun;2(6):40-4.

National hospice study analysis plan. Greer DS, Mor V, Sherwood S, Morris JN, Birnbaum H. *J Chronic Dis*. 1983;36(11):737-80.

The determinants of nursing home operating costs in New York State. Lee AJ, Birnbaum H. *Health Serv Res*. 1983 Summer;18(2 Pt 2):285-308.

How nursing homes behave: a multi-equation model of nursing home behavior. Lee AJ, Birnbaum H, Bishop C. *Soc Sci Med*. 1983;17(23):1897-1906.

“Cost Implications of Elimination of the Three-Day Hospital Stay Requirement for Medicare SNF Reimbursement.” Testimony, United States House of Representatives Committee on Ways & Means, Congressional Record, Serial 97-40, February 3, 1982.

*Public Pricing of Nursing Home Care*, Birnbaum H, Lee AJ, Bishop C, Jensen G. Cambridge, MA: Abt Books, 1981.

Why do nursing home costs vary? The determinants of nursing home costs. Birnbaum H, Bishop C, Lee AJ, Jensen G. *Med Care*. 1981 Nov;19(11):1095-107.

An Appraisal of Models of the Dental Sector for Use in Local Planning.” Proceedings of the Conference on Modeling Techniques and Applications in Dentistry, Division of Dentistry Health Resources Administration, *DHEW*, February 18, 1980.

*The Cost of Catastrophic Illness*. Lexington, MA: D.C. Heath and Company, 1978.

Focusing the catastrophic illness debate. Birnbaum H, Naierman N, Schwartz M, Wilson D. *Q Rev Econ Bus*. 1979 Autumn;19(3):17-33.

Career Origins, On-the-Job Training and Earnings. Birnbaum H. *Southern Economic Journal*. 1976. 42 (.4): 587-599.

Significance of Career Origins, Birnbaum H, in *Labor Market Segmentation*, edited by Gordon, Reich, and Edwards, Lexington Books, 1975.

Homeownership and the Wealth Position of Black and White Americans,” Birnbaum H, Weston R. *Review of Income and Wealth*. 1974. 20 (1): 103-18.

Income Distribution in the United States,” (Ackerman F, Wechsler J, Zimbalist A, Birnbaum H. Versions of this paper have been published in Weisskopf and MacEwan, eds., *Perspectives on the Economic Problems*, Prentice-Hall, second edition 1973, and Mermelstein, *Economics: Mainstream Readings and Radical Critiques*, Random House, second edition, 1973.

## **SELECTED LITIGATION AND REGULATORY CASE ASSIGNMENTS**

- **Columbia/HCA Health Care Corporation Billing Practices Litigation**  
*U.S. District Court, Middle District of Tennessee*  
In a class action settlement, provide economic support to estimate the extent of inappropriate billings and economic implications regarding the class.
- **New York Life Insurance Co. v. United States Of America**  
*U.S. Court Of Federal Claims*  
Testify and provide expert opinion on basis of analysis of Medicare and private payer claims data regarding the extent to which certain beneficiaries would have been covered by Medicare, and the amount of damages to the employer.

- **United States of America v. New York Life Insurance Co.**  
*U.S. District Court, District of Columbia*  
Expert witness declaration involving claims data analysis for a matter involving Medicare secondary payer obligations of an employer.
- **Coram Healthcare Corporation v. Aetna U.S. Healthcare, Inc. and Aetna U.S. Healthcare, Inc. v. Coram Healthcare Corporation**  
*U.S. District Court, Eastern District of Pennsylvania*  
Development of economic analysis regarding factors influencing home care utilization and cost, for matter involving dispute over managed care capitation rates.
- **Synthroid® Marketing Litigation**  
*U.S. District Court, Northern District of Illinois, Eastern Division*  
Development of economic analysis of the characteristics of competition that distinguish narrow therapeutic index drugs to support expert opinion, for class certification matter.
- **United States of America v. JD McKean and Medical Consultants**  
*U.S. District Court, Western District of Oklahoma*  
Economic and statistical analysis of claims submitted to Medicare, Medicaid, and other government programs to support expert opinion, for matter involving fraud and abuse.
- **Victoria Orthopedic Associates, P.A., v. Eastman Kodak Company; E.I. DuPont de Nemours & Co.; Miles Inc.; and Fuji Medical Systems U.S.A. Inc.**  
*U.S. District Court, Eastern District of New York*  
Economic analysis of medical x-ray film market to assess price-fixing allegation.
- **Ortho Pharmaceutical Corporation v. Amgen, Inc. Litigation Endispute Arbitration**  
*Chicago, Illinois*  
Testify and provide opinion, on basis of economic analysis, regarding the quality of Medicare claims data for use in resolving dispute regarding size of market for pharmaceutical product, epoetin alfa.
- **In Congressional hearings regarding Medicare SNF Reimbursement**  
*U.S. Congress, Ways and Means Committee*  
Testimony, based on economic analysis of: Cost Implications of Elimination of the Three-Day Hospital Stay Requirement for Medicare SNF Reimbursement. February 2, 1982.