URVI DESAI, PH.D. Vice President

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Dr. Desai specializes in health economics and outcomes research (HEOR), developing strategic solutions, and assisting with litigation matters in the health care sector. She has designed and managed numerous HEOR studies including cost-of-illness analyses, comparative effectiveness analyses, adherence and persistence evaluations, patient/physician surveys, and pharmacoeconomic modeling. Her work spans several disease areas, including Alzheimer's disease and related dementias; diabetes; and respiratory illnesses. Dr. Desai's research has been presented at numerous conferences, and published in peer-reviewed journals including *Diabetes Care*, *Alzheimer's & Dementia*, *Health Affairs*, and the *Journal of Medical Economics*, as well as in non-academic outlets such as *STAT*. She has served as an associate editor for the *Journal of Alzheimer's Disease*. On the strategy side, Dr. Desai has developed formulary dossiers and presentation materials to assist clients with the commercialization of pharmaceutical products. In her litigation work, she has assisted in several cases in the health care sector involving patent disputes, antitrust issues, and False Claims Act issues. Prior to joining Analysis Group, Dr. Desai was a graduate teaching and research assistant at Virginia Commonwealth University.

EDUCATION

2007–2011 Ph.D., pharmaceutical sciences (concentration in pharmacoeconomics and outcomes research), Virginia Commonwealth University School of Pharmacy

2002–2006 B.Pharm., Sardar Patel University, Vallabh Vidyanagar, India

PROFESSIONAL EXPERIENCE

2011–Present	Analysis Group, Inc.
	Vice President (2021–Present)
	Manager (2016–2020)
	Associate (2011–2015)
2007–2011	Virginia Commonwealth University School of Pharmacy Graduate Teaching and Research Assistant

PEER-REVIEWED PUBLICATIONS

- Birnbaum HG, Carley CD, Desai U, Ou S, Zuckerman PR. Measuring the impact of air pollution on healthcare costs. *Health Affairs* 2020;39(12):2113-2119
- Desai U, Kirson NY, Lu Y, Bruemmer V, Andrews JS. Disease severity at the time of initial cognitive assessment is related to prior health-care resource use burden. *Alzheimers Dement (Amst)* 2020 Aug 11;12(1):e12093

- Balogh EG, Perez-Nieves M, Cao D, Hadjiyianni I, Ashraf N, Desai U, Snoek FJ, Sturt JA. Key strategies for overcoming psychological insulin resistance in adults with type 2 diabetes: the UK subgroup in the EMOTION study. *Diabetes Ther.* 2020;11(8):1735-1744
- Tang T, Hessler D, Polonsky WH, Fisher L, Reed B, Irani T, Desai U, Perez-Nieves M. Successful healthcare provider strategies to overcome psychological insulin resistance in United States and Canada. *The Journal of the American Board of Family Medicine* 2020;33(2):198-210
- Kirson NY, Meadows ES, **Desai U**, Smith BP, Cheung HC, Zuckerman P, Matthews BR. Temporal and geographic variation in the incidence of Alzheimer's disease diagnosis in the US between 2007 and 2014. *Am Geriatr Soc* 2020;68(2):346-353
- Andrews JS, Desai U, Kirson NY, Zichlin ML, Ball DE, Matthews BR. Disease severity and minimal clinically important differences in clinical outcome assessments for Alzheimer's disease clinical trials. *Alzheimers Dement (N Y)* 2019;5:354-363
- Stuckey H. Fisher L., Polonsky WH, Hessler D, Snoek FJ, Tang TS, Hermanns N, Mundet X, Silva M, Sturt J, Okazaki K, Cao D, Hadjiyianni I, Ivanova JI, Desai U, Perez-Nieves M. Key factors for overcoming psychological insulin resistance: an examination of patient perspectives through content analysis. *BMJ Open Diabetes Research & Care* 2019;7:e000723
- Polonsky WH, Fisher L, Hessler D, Stuckey H, Snoek FJ, Tang T, Hermanns N, Mundet X, Silva M, Sturt J, Okazaki K, Hadjiyianni I, Cao D, Ivanova J, Desai U, Perez-Nieves M. Identifying solutions to psychological insulin resistance: an international study. *Journal of Diabetes and Its Complications* 2019;33(4):307-314
- Desai U, Kirson NY, Ye W, Mehta NR, Wen J, Andrews JS. Trends in health service use and potentially avoidable hospitalizations before Alzheimer's disease diagnosis: a matched, retrospective study of US Medicare beneficiaries. *Alzheimer's & Dementia: Diagnosis, Assessment, & Disease Monitoring* 2019;11:125-135
- Desai U, Kirson NY, Kim J, Khunti K, King S, Trieschman E, Hellstern M, Hunt PR, Mukherjee J. Time to treatment intensification after monotherapy failure and its association with subsequent glycemic control among 93,515 patients with type 2 diabetes. *Diabetes Care* 2018 Oct;41(10):2096-2104
- Dell'Agnello G, Desai U, Kirson NY, Wen J, Meiselbach MK, Reed CC, Belger M, Lenox-Smith A, Martinez C, Rasmussen J. Reliability of Coded Data to Identify Earliest Indications of Cognitive Decline, Cognitive Evaluation, and Alzheimer's disease Diagnosis: A Pilot Study in England *BMJ Open* 2018;8(3):e019684
- Fowler NR, Campbell NL, Pohl GM, Munsie LM, Kirson NY, Desai U, Trieschman EJ, Meiselbach MK, Andrews JS, Tanaka Y, Boustani M. One Year Impact of the Medicare Annual Wellness Visit on Detection of Cognitive Impairment: A Cohort Study. *Journal of the American Geriatrics Society* 2018 May;66(5):969-975
- Suzuki S, Desai U, Strizek A, Ivanova JI, Garcia-Horton V, Cai Z, Schmerold L, Liu X, Perez-Nieves M. Characteristics, treatment patterns, and economic outcomes of patients initiating injectable medications for management of Type 2 diabetes mellitus in Japan: : Results from a Retrospective Claims Database Analysis *Diabetes Therapy* 2018 Jun;9(3):1125-1141

- Kirson NY, Andrews JS, Desai U, King SB, Schonfeld S, Birnbaum HG, Ball DE, Kahle-Wrobleski K. Patient Characteristics and Outcomes Associated with Receiving an Earlier Versus Later Diagnosis of Probable Alzheimer's Disease. J Alzheimers Dis 2018;61(1):295-307
- Andrews JS, Desai U, Kirson NY, Enloe CJ, Ristovska LJ, King S, Birnbaum HG, Fleisher AS, Ye W, Kahle-Wrobleski K. Functional limitations and health care resource utilization for individuals with cognitive impairment without dementia: Findings from a US population-based survey. *Alzheimer's and Dementia: Diagnosis, Assessment & Disease Monitoring* 2017;6:65-74
- Hadjiyianni I, Desai U, Suzuki S, Ivanova JI, Cao D, Kirson NY, Chida D, Enloe C, Birnbaum HG, Perez-Nieves M. Basal Insulin Persistence, Associated Factors, and Outcomes After Treatment Initiation: A Retrospective Database Study Among People with Type 2 Diabetes Mellitus in Japan. *Diabetes Ther* 2017;8(1):149-166
- Happich M, Kirson NY, Desai U, King S, Birnbaum HG, Reed C, Belger M, Lenox-Smith A, Price D. Excess costs associated with possible misdiagnosis of Alzheimer's disease among patients with vascular dementia in a UK CPRD population. *Journal of Alzheimer's Disease* 2016;53:171–183
- Kirson NY, Desai U, Ristovska LJ, Birnbaum HG, Ye W, Andrews JS, Ball DE, Kahle-Wrobleski K. Assessing the economic burden of Alzheimer's disease patients first diagnosed by specialists. BMC Geriatrics 2016;16:138 DOI 10.1186/s12877-016-0303-5
- Perez-Nieves M, Kabul S, Desai U, Ivanova JI, Kirson, NY, Cummings AK, Birnbaum HG, Duan R, Cao D, Hadjiyianni I. Basal Insulin Persistence, Associated Factors, and Outcomes after Treatment Initiation among People with Type 2 Diabetes Mellitus in the US. *Curr Med Res Opin* 2016;32(4):669-80
- Kao DP, Lindenfeld J, Macaulay DS, Birnbaum HG, Jarvis JL, Desai US, Page RL. Impact of a telehealth and care management program on all-cause mortality and healthcare utilization in patients with heart failure. *Telemed J E Health* 2016;22(1):2-11
- Lefebvre P, Duh MS, Lafeuille MH, Gozalo L, Desai U, Robitalle M, Albers F, Yancey S, Ortega H, Forshag M, Lin X, Dalal A. Acute and chronic systemic corticosteroid-related complications in patients with severe asthma. *J Allergy Clin Immunol* 2015;136(6):1488-95
- Hunter CA, Kirson NY, Desai U, Cummings AKG, Faries DE, Birnbaum HG. Medical costs of Alzheimer's disease misdiagnosis among US Medicare beneficiaries. *Alzheimers Dement* 2015;11(8):887-95
- Eby EL, Szymialis RA, Ivanova JI, Desai U, Birnbaum HG, Cummings AKG, SanRoman A, Deschamps K, Gelwicks S, Swindle RW. Do units and costs of comparable insulins differ by manufacturer? *Am J Pharm Benefits* 2015;7(3):e62-e72
- Rice JB, Desai U, Ristovska LJ, Cummings AKG, Birnbaum HG, Skornicki M, Margolis DJ, Parsons NB. Economic outcomes among Medicare patients receiving bioengineered cellular technologies for treatment of diabetic foot ulcers. *J Med Econ* 2015;18(8):586–595
- Au DH, Macaulay DS, Jarvis JL, Desai US, Birnbaum HG. Impact of a telehealth and care management program for patients with chronic obstructive pulmonary disease. *Ann Am Thorac Soc* 2015;12(3):323-331

- Rice JB, Desai U, Cummings AK, Birnbaum HG, Skornicki M, Parsons NB. Burden of venous leg ulcers in the United States. *J Med Econ* 2014;17(5):347-356
- Rice JB, Desai U, Cummings AK, Birnbaum HG, Skornicki M, Parsons NB. Burden of diabetic foot ulcers for Medicare and Private Insurers. *Diabetes Care* 2014;37(3):651-658

CONFERENCE PRESENTATIONS

- Bonaca MP, Hess CN, Kharat A, Desai U, Milentijevic D, Laliberte F, Zuckerman P, Benson J, Lefebvre P, Hiatt WR. Incidence and costs of major atherothrombotic vascular events among patients with peripheral artery disease after revascularization. Poster presentation at AHA Scientific Sessions, November 2020
- Mouchet J, Betts KA, Ionescu-Itty R, Butler LM, Delmar P, Georgieva M, Kulalert T, Desai U. Cognitive and functional progression along the continuum from MCI to Alzheimer's disease: a latent class analysis using the NACC data. Poster presentation at Alzheimer's Association International Conference, July 2020
- **Desai** U, Kirson NY, Guglielmo A, Le HH, Spittle T, Tseng-Tham J, Shawi M, Sheehan JJ. Cost efficiency of esketamine nasal spray versus standard of care for treatment-resistant depression. Poster presentation at the Annual International Meeting of ISPOR, May 2019
- Desai U, Rice JB, Mannick J, Teo G, Zuckerman P, Birnbaum H, Berger M. Medicare savings resulting from reductions in prevalence of respiratory tract infections among the elderly. Poster presentation at the AMCP Annual Meeting, April 2019
- Desai U, Rice JB, Lavery LA. Diabetic foot ulcer patients receiving HBO are more complex than comparison groups. Poster presentation at the Fall Symposium of Advanced Wound Care, November 2018
- Rice JB, Desai U, Lavery LA. Patients receiving HBO have fewer above-the-knee amputations than comparison groups. Poster presentation at the Fall Symposium of Advanced Wound Care, November 2018
- Rice JB, Desai U, Lavery LA. HBO patients with diabetic foot ulcers already cost the system more than comparison groups in the year before treatment begins. Poster presentation at the Fall Symposium of Advanced Wound Care, November 2018
- Fisher L, Polonsky WH, Hessler D, Ivanova JI, Desai U, Cao D, Snoek FJ, Perez-Nieves M. Patientlevel predictors of delay in insulin initiation and periods of insulin discontinuation among adults with type 2 diabetes. Poster presentation at EASD 54th Annual Meeting, October 2018
- Andrews JS, Desai U, Kirson NY, Zichlin M, Ball DE, Matthews BR. Do the minimal clinically important difference estimates for clinical outcome assessments for Alzheimer's disease differ by disease severity? Poster presentation at Alzheimer's Association International Conference, July 2018
- Stuckey H, Polonsky WH, Fisher L, Hessler D, Snoek FJ, Tang T, Hermanns N., Mundet-Tuduri X, Silva M, Sturt J, Okazaki K, Cao D, Hadjiyianni I, Ivanova JI, Desai U, Perez-Nieves M. Key factors for overcoming psychological insulin resistance: An examination of a large international sample through content analysis. Podium presentation at ADA 78th Scientific Sessions, June 2018

- Tang T, Hessler D, Polonsky WH, Fisher L, Hadjiyianni I, Cao D, Reed B, Kalirai S, Irani T, Ivanova JI, Desai U, Perez-Nieves M. Successful healthcare provider strategies to overcome psychological insulin resistance in US and Canada. Poster presentation at ADA 78th Scientific Sessions, June 2018
- Hessler D, Polonsky WH, Fisher L, Snoek FJ, Hadjiyianni, I, Cao D, Ivanova, JI, Desai U, Perez-Nieves M. Attitudes among adults with type 2 diabetes affecting insulin initiation and discontinuation. Poster presentation at ADA 78th Scientific Sessions, June 2018
- Polonsky WH, Fisher L, Stuckey H, Hessler D, Snoek FJ, Hadjiyianni I, Cao D, Pollom D, Kalirai S, Ivanova JI, Desai U, Perez-Nieves M. Identifying solutions to psychological insulin resistance: An international study. Poster presentation at IDF 2017 Congress, December 2017
- Andrews JS, Desai U, Kirson NY, Zichlin M, Schonfeld S, Ball DE, Green C. Clinical Attributes and Disease Progression among Patients with Mild Cognitive Impairment Associated with Alzheimer's disease: Findings from the National Alzheimer's Coordinating Center; Poster presentation at CTAD 2017
- Teh HH, Desai U, Kirson NY, Hellstern M, Leigh PS, Mukherjee J, Khunti K. Renal outcomes with DPP-4 inhibitors compared with sulfonylurea as add-on to metformin among patients with type 2 diabetes. Podium presentation at 53rd Annual Meeting, EASD, September 2017
- Desai U, Kirson NY, Mehta N, Wen J, Sheng Y, Ye W, Andrews JS. Trends in health service use and potentially avoidable hospitalizations prior to Alzheimer's disease diagnosis: a matched retrospective study of US Medicare beneficiaries. Podium presentation at Alzheimer's Association International Conference, July 2017
- Fowler NR, Campbell NL, Pohl GM, Munsie LM, Kirson NY, **Desai U**, Trieschman EJ, Meiselbach MK, Andrews JS, Tanaka Y, Boustani M. Is the annual wellness visit adequate to impact cognitive care? Poster presentation at Alzheimer's Association International Conference, July 2017
- Desai U, Huang M, Kirson NY, King SB, Hellstern M, Schonfeld S, Birnbaum HG, Lee A. Patient characteristics and treatment adherence among patients treated with delayed-release dimethyl fumarate for relapsing remitting multiple sclerosis in Israel. Poster presentation at 22nd Annual International meeting, ISPOR, May 2017
- Kim J, Desai U, Kirson NY, King S, Trieschman E, Hellstern M, Hunt P, Mukherjee J. Time to treatment intensification and its association with subsequent macrovascular outcomes among patients with type 2 diabetes. Podium presentation at 52nd Annual Meeting, EASD, September 2016
- Desai U, Kirson NY, Kim J, Khunti K, King S, Trieschman E, Hellstern M, Hunt PR, Mukherjee J. Time to treatment intensification and its association with subsequent macrovascular outcomes among patients with type 2 diabetes. Poster presentation at 52nd Annual Meeting, EASD, September 2016
- Desai U, Kirson NY, Kim J, Khunti K, King S, Trieschman E, Hellstern M, Hunt PR, Mukherjee J. Time to treatment intensification and its association with subsequent glycemic control among patients with type 2 diabetes. Featured presentation at ADA 76th Scientific Sessions, June 2016
- Hadjiyianni I, Desai U, Ivanova JI, Kirson NY, Enloe CJ, Cummings AK, Birnbaum HG, Suzuki SJ, Duan R, Raibouaa A, Cao D, Perez-Nieves M. Basal insulin persistence, associated factors, and outcomes after treatment initiation among people with type 2 diabetes mellitus in Japan. Poster presentation at ISPOR 18th Annual European Congress, November 2015

- Andrews JS, Kirson NY, Desai U, Enloe CJ, Ristovska LJ, King S, Birnbaum HG, Fleisher AS, Ye W, Kahle-Wrobleski K. Functional limitations and healthcare resource utilization for individuals with cognitive impairment without dementia: findings from a us population-based survey. Poster presentation at Alzheimer's Association International Conference, July 2015
- Desai U, Kabul S, Ivanova JI, Kirson NY, Cummings AKG, Ristovska LJ, Birnbaum HG, Hadjiyanni I, Duan R, Cao D, Perez-Nieves M. Factors associated with basal insulin persistence after initiation among people with Type 2 diabetes mellitus. Poster presentation at American Diabetes Association Scientific Sessions, June 2015
- Rice JB, Desai U, Ristovska LJ, Cummings AKG, Birnbaum HG, Skornicki M, Margolis DJ, Parsons NB. Economic outcomes among Medicare patients receiving bioengineered cellular technologies for treatment of diabetic foot ulcers. Poster presentation at ISPOR 20th Annual International Meeting, May 2015
- Lefebvre P, Duh MS, Lafeuille MH, Gozalo L, Desai U, Albers F, Yancey S, Ortega H, Forshag M, Lin X, Dalal A. Economic and clinical burden of acute and chronic systemic corticosteroid-related complications in asthma patients. Poster presentation at American Thoracic Society International Conference, May 2015
- Lefebvre P, Huang J, Duh MS, Frois C, Desai U, Kageleiry A, Enloe CJ, Hammer M, Garber L. The impact of body mass index on diabetes progression and changes in patients' glycemic status over time in the real-world setting. Poster presentation at American Society of Bariatric Physicians' Annual Overcoming Obesity Symposium, September 2014
- Kirson NY, Desai U, King S, Birnbaum HG, Price D, Belger M, Hunter CA, Lenox-Smith AJ, Reed CC, Happich M. Excess costs associated with possible misdiagnosis of Alzheimer's disease among patients with vascular dementia in a UK CPRD population. Poster presentation at Alzheimer's Association International Conference, July 2014
- Kirson NY, Desai U, Ristovska L, Cummings AKG, Birnbaum HG, Kahle-Wrobleski K, Ye W, Andrews JS, Hunter CA Assessing the economic burden of Alzheimer's disease patients treated by specialists on the date of preliminary diagnosis of cognitive decline. Podium presentation at Alzheimer's Association International Conference, July 2014
- Ivanova JI, Foster S, Desai U, Hayes-Larson E, King S, Birnbaum HG, Swindle RW. Units and costs per day per claim of comparable insulins supplied to Medicaid patients. Poster presentation at ISPOR 19th Annual International Meeting, May 2014
- Kirson NY, Desai U, Cummings AKG, Birnbaum HG, Hunter CA. Estimation of the number of physicians specializing in treating adult dementia patients in the US: Applying the Appropriate Use Criteria to Medicare claims data. Poster presentation at 8th Human Amyloid Imaging Meeting, January 2014
- Hunter CA, Kirson NY, Desai U, Cummings AKG, San Roman AM, Faries DE, Hardwick C, Birnbaum HG. Excess costs associated with misdiagnosis of Alzheimer's disease among US Medicare beneficiaries with vascular dementia or Parkinson's disease. Podium presentation at Alzheimer's Association International Conference, July 2013

- Rice JB, Desai U, Cummings AKG, Skornicki M, Parsons NB, Birnbaum HG. Medical, drug, and work-loss costs of diabetic foot ulcers. Podium presentation at ISPOR 18th Annual International Meeting, May 2013
- Rice JB, Desai U, Cummings AKG, Skornicki M, Parsons NB, Birnbaum HG. Medical, drug, and work-loss costs of venous leg ulcers. Poster presentation at ISPOR 18th Annual International Meeting, May 2013
- Rice JB, Desai U, Cummings AKG, Skornicki M, Parsons NB, Birnbaum HG. Healthcare resource utilization and economic burden of diabetic foot ulcers in privately-insured and Medicare populations. Poster presentation at the Spring Symposium of Advanced Wound Care, May 2013
- Rice JB, Desai U, Cummings AKG, Skornicki M, Parsons NB, Birnbaum HG. Healthcare resource utilization and economic burden of venous leg ulcers in privately-insured and Medicare populations. Poster presentation at the Spring Symposium of Advanced Wound Care, May 2013
- Au DH, Macaulay DS, Jarvis JL, Desai US, Birnbaum HG. Impact of a telehealth and care management program on resource utilization in Medicare beneficiaries with chronic obstructive pulmonary disease. Poster presentation at American Thoracic Society International Conference, May 2013
- Eby EL, Szymialis RA, Ivanova JI, **Desai U**, Birnbaum HG, Cummings AKG, SanRoman A, Deschamps K, Gelwicks S, Swindle RW. Units and costs of comparable insulin supplied to patients: is there a difference by manufacturer? Poster presentation at Academy of Managed Care Pharmacy, April 2013
- Page RL, Kao DP, Macaulay D, Birnbaum HG, Jarvis JL, **Desai U**, Lindenfeld J. Integrated telehealth and care management program reduces all-cause mortality in Medicare beneficiaries with heart failure. Podium presentation at American Heart Association Scientific Sessions, November 2012
- Ivanova JI, Birnbaum HG, **Desai U**, Kirson NY, Cummings AKG, SanRoman A, Rao S, Andrews R, Doan Q, Zachry W. Prevalence, comorbidity burden, and treatment of Alzheimer's disease among the elderly in the US. Poster presentation at Alzheimer's Association International Conference, July 2012
- Desai U, Ivanova JI, Birnbaum HG, Cummings AKG, Bornstein A, Karafilidis J, Spalding W. Comparisons of patient characteristics and healthcare costs by quartile among patients with allergic rhinitis. Poster presentation at ISPOR 17th Annual International Meeting, June 2012
- Ivanova JI, Desai U, Birnbaum HG, Cummings AKG, Bornstein A, Karafilidis J, Spalding W. Association of allergic rhinitis with asthma exacerbations and healthcare costs in asthma patients. Podium presentation at ISPOR 17th Annual International Meeting, June 2012
- Desai U, Carroll NV. Impact of Medicare Part D coverage gap on beneficiaries' adherence to prescription medications. Poster presentation at ISPOR 17th Annual International Meeting, June 2012
- Patel D, Holdford H, Desai U, Carroll N. Economic Burden of Anaphylaxis in the United States.
 Poster presentation at ISPOR 15th Annual International Meeting, May 2010
- Desai U, Carroll NV. A cost-consequence analysis comparing an established and a novel epinephrine autoinjector for anaphylaxis. Poster presentation at ISPOR 14th Annual International Meeting, May 2009

NON-ACADEMIC PUBLICATIONS

Kirson N, **Desai U**, Fowler, N. "We need to improve Medicare's annual wellness visit to better detect early dementia." *STAT* (<u>https://www.statnews.com/2018/07/20/detect-dementia-medicare-annual-wellness-visit/</u> July 20, 2018)

PROFESSIONAL ASSOCIATIONS AND MEMBERSHIPS

- 2007–Present International Society of Pharmacoeconomics and Outcomes Research (ISPOR)
- 2013–Present Alzheimer's Association

SELECTED HONORS AND AWARDS

2010–2011 Victor A. Yanchick Award for excellence in scholarship, research, teaching, and service Virginia Commonwealth University School of Pharmacy

Distinguished Service Award: Student Network Chair ISPOR

Distinguished Dissertation Award Virginia Commonwealth University Graduate School

2009–2010 Distinguished Service Award: Survey Committee Chair *ISPOR*