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remiroazocar

Antonio Remiro-Azócar, PhD

Statistical Methodology and Innovation Leader

Experience

Industry

Lead Medical Affairs Statistician, *Bayer*, United Kingdom. **Oct 2021–**

- Leading statistical input to life-cycle management strategies, publication plans, reimbursement requirements, HTA studies and analyses for payers across several therapeutic areas
- Leading global cross-functional teams to generate publications, presentations and posters
- Scientifically appraising non-randomized study proposals and protocols, and providing statistical and methodological consultation to multi-disciplinary teams
- Developing and implementing innovative statistical methodology for payer and reimbursement needs
- Keeping abreast of HTA regulations and methodological guidance
- Leading scientific strategies for real-world evidence projects
- Overseeing and ensuring the accurate and timely delivery of statistical work outsourced to external collaborators such as HEOR providers
- Building collaborations with academic experts and co-supervising research projects/partnerships with universities
- Steering causal inference research initiatives among statisticians and epidemiologists

Therapeutic areas: cardiovascular, women's healthcare, ophthalmology

Statistical Consultant (contract), *Hospital for Sick Children*, Remote. **Sep 2020–Mar 2021**

Development of internal methodological guidance on indirect treatment comparisons for the Canadian Agency for Drugs and Technologies in Health (CADTH). Therapeutic area: oncology.

Statistical Consultant (contract), *ICON plc*, Remote. **Sep 2019–May 2020**

Development of cure survival modelling methodology for immunotherapy trials. Therapeutic area: oncology.

Statistical Consultant (contract), *IQVIA*, London. **Oct 2018–Mar 2020**

Survival analysis, meta-analysis, indirect treatment comparisons, systematic literature reviews, statistical support for submission of evidence dossiers to HTA authorities (NICE and SMC), health economic modelling, mixed models, discrete event simulation, Markov modelling, utility mapping, Bayesian analysis, preparation of conference abstracts and manuscripts for publication of research papers. Therapeutic areas: oncology, hematology, hepatology, neurology, and addiction.

Academia

Graduate Teaching Assistant, *London School of Economics and Political Science*. **Sep 2018–Jun 2021**

Taught modules on "Statistical Models and Data Analysis" and "Applied Regression" to statistics undergraduates

Graduate Teaching Assistant, *University College London*. **Sep 2018–Jun 2019**

Taught "Introductory Statistical Methods and Computing" to life sciences undergraduates. Co-supervisor for MSc research projects. Development of R and Stan programming material for a course in Bayesian methods in health economics.

Research Intern, *Imperial College London*. **Jun 2016–Sep 2016**

Received a NERC grant to mine under-exploited plant information resources at the Royal Botanic Gardens, Kew. Explored global and regional biodiversity patterns using R and developed statistical models to estimate future species discovery rates and biodiversity hotspots.

Education

PhD Statistical Science, *University College London*. **2018–2022**

Based at the Statistics for Health Economic Evaluation Group, a research group in the Department of Statistical Science, under the supervision of Gianluca Baio and Anna Heath (University of Toronto). Thesis on indirect treatment comparisons in the absence of head-to-head trials, adjusting for differences in covariate distributions across studies and overcoming limited access to patient-level data.

MRes Financial Computing, *University College London*, *Distinction*. **2017–2018**

Full 4-year (1+3) MRes+PhD scholarship (700 applicants for 15 positions) from the EPSRC Centre for Doctoral Training in Financial Computing and Analytics, a joint collaboration between UCL, LSE and Imperial College London. PhD-level courses in computational statistics. Advanced programming and software development modules in Python and C++.

MSc Machine Learning, *University College London*, *Merit*. **2016–2017**

Dissertation on the hierarchical Bayesian modelling of decision-making tasks based at the Gatsby Computational Neuroscience Unit under the supervision of Oliver J Robinson and Peter Dayan. Deep and reinforcement learning courses taught by Google DeepMind.

BSc (Hons) Mathematics and Physics, *University of Bath*, *2:1*. **2013–2016**

Research

Papers

- **Remiro-Azócar, A.**, Heath, A., and Baio, G. "Model-based standardization using multiple imputation". *In press, BMC Medical Research Methodology*, 2024. Available at: `https://doi.org/10.48550/arXiv.2305.08284`
- **Remiro-Azócar, A.**, Heath, A., and Baio, G. "Methodological considerations for novel approaches to covariate-adjusted indirect treatment comparisons". *Research Synthesis Methods*, 14(4), 2023. Available at: `https://doi.org/10.1002/jrsm.1645`
- **Remiro-Azócar, A.** "Transportability of model-based estimands in evidence synthesis". *Under revision, Statistics in Medicine*, 2023. Available at: `https://doi.org/10.48550/arXiv.2210.01757`
- **Remiro-Azócar, A.**, Heath, A., and Baio, G. "Reflections about transporting marginal treatment effects to targets without individual-level data". *Under revision, Research Synthesis Methods*, 2023.
- **Remiro-Azócar, A.**, Heath, A., and Baio, G. "Parametric G-computation for Compatible Indirect Treatment Comparisons with Limited Individual Patient Data". *Research Synthesis Methods*, 13(6), 2022. Available at: `https://doi.org/abs/10.1002/jrsm.1565`
- **Remiro-Azócar, A.** "Two-stage matching-adjusted indirect comparison". *BMC Medical Research Methodology*, 22(1), 2022. Available at: `https://doi.org/10.1186/s12874-022-01692-9`
- **Remiro-Azócar, A.** "Target estimands for population-adjusted indirect comparisons". *Statistics in Medicine*, 41 (28), 2022. Available at: `https://doi.org/10.1002/sim.9413`
- **Remiro-Azócar, A.** "Some considerations on target estimands for health technology assessment". *Statistics in Medicine*, 41 (28), 2022. Available at: `https://doi.org/10.1002/sim.9566`
- **Remiro-Azócar, A.** "Population-Adjusted Indirect Treatment Comparisons with Limited Access to Patient-Level Data". *Doctoral thesis, University College London*, 2022. Available at: `https://discovery.ucl.ac.uk/id/eprint/10144848/`
- **Remiro-Azócar, A.**, Heath, A., and Baio, G. "Methods for Population Adjustment with Limited Access to Individual Patient Data: A Review and Simulation Study". *Research Synthesis Methods*, 12(6), 2021. Available at: `https://doi.org/10.1002/jrsm.1511`
- **Remiro-Azócar, A.**, Heath, A., and Baio, G. "Effect modification in anchored indirect treatment comparison: Comments on "Matching-adjusted indirect comparisons: Application to time-to-event data"". *Statistics in Medicine*, 41(8), 2022. Available at: `https://doi.org/10.1002/sim.9286`
- **Remiro-Azócar, A.**, Heath, A., and Baio, G. "Conflating marginal and conditional treatment effects: Comments on "Assessing the performance of population adjustment methods for anchored indirect comparisons: A simulation study"". *Statistics in Medicine*, 40(11), 2021. Available at: `https://doi.org/10.1002/sim.8857`
- van Oostrum, I., Ouwens, M., **Remiro-Azócar, A.**, Baio, G. Postma, M., Buskens, E., and Heeg, B. "Comparison of parametric survival extrapolation approaches incorporating general population mortality for adequate health technology assessment of new oncology drugs". *Value in Health*, 24 (9), 2021. Available at: `https://doi.org/10.1016/j.jval.2021.03.008`
- **Remiro-Azócar, A.**, Heath, A., and Baio, G. "Marginalization of Regression-Adjusted Treatment Effects in Indirect Comparisons with Limited Patient-Level Data". Working Paper, 2020. Available at: `https://doi.org/10.48550/arXiv.2008.05951`

Poster presentations

- Morga, A., Gorst-Rasmussen, A., Polavieja, P., **Remiro-Azócar, A.**, …, Rosettani, B. "Estimands in Health Technology Assessments: Methodological Considerations and Recommendations". ISPOR Europe 2023
- Mohr, P., Larkin, J., Paly, V. F., **Remiro-Azócar, A.**, …, Middleton, M. "Estimating long-term survivorship in patients with advanced melanoma treated with immune-checkpoint inhibitors: Analyses from the phase III CheckMate 067 trial". ESMO Virtual Congress 2020.
- Paly, V. F., Mohr, P., Larkin, J., Middleton, M., Youn, J., **Remiro-Azócar, A.**, …, Kurt, M. "Assessing the impact of modeling non–disease-related mortality on long-term survivorship rates in previously untreated advanced melanoma: a case study from CheckMate 067". ISPOR US 2021.
- **Remiro-Azócar, A.**, Heath, A., and Baio, G. "Predictive-adjusted indirect comparison (PAIC): A novel method for population-adjusted indirect comparison". ISPOR Europe 2019.

Invited presentations

- PSI HTA SIG Webinar on "Indirect treatment comparisons: Choosing the right tool for the job". January 2024.
- PSI HTA SIG Webinar on "Estimands, PICOs and Co. - Are we losing or gaining in translation?". December 2023.
- ISPOR US Spotlight Session on "Apples and oranges in the context of anchored indirect treatment comparisons – Is there more to it than effect modifiers?", Boston, United States. May 2023.
- R for Health Technology Assessment (R-HTA) Workshop on "Marginalization of regression-adjusted treatment effects". July 2021. Available at: `https://r-hta.org/events/workshop/2021/remiro-azocar.pdf`.
- UCL Priment Clinical Trials Unit Statistical Seminar. November 2020.
- UCL Statistics for Health Economic Evaluation Seminar. June 2020.
- Health Economics Study Group Winter Meeting, Newcastle, UK. January 2020.
- Spanish Health Economics Association Conference, Albacete, Spain. June 2019.

Memberships

- Statisticians in the Pharmaceutical Industry (PSI). Special interest groups: HTA, RWD.
- Professional Society for Health Economics and Outcomes Research (ISPOR). Special interest groups: Clinical Outcome Assessment, RWE, Statistical Methods in HEOR.
- EFSPI/EFPIA Estimand Implementation Working Group. Estimands in late phase sub-team.

Computing

R, Stan/BUGS/JAGS, SAS (working knowledge), Git, Excel, VBA

Languages

Spanish: Native; **English**: Fully bilingual; **French**: Intermediate.