A Novel Approach for Generating Robust Population Estimates for Use in HTA and Regulatory Submissions: Demonstration in CLL in Germany

RWD55

Kai Strobel [1], Zuzana Dostalova [2], Patricia Linke [1], Stefanie Spirin [1], Ewelina Kubietz [1], Maria Friese [1], Franziska Haug [1], Amanda Moore [2], Jeffrey Brown [2], Markus Rückert [1]

[1] TriNetX Oncology GmbH, Freiburg, Germany, [2] TriNetX LLC, Cambridge, MA, USA

INTRODUCTION

Reliable, indication-specific epidemiological estimates are essential for interpreting study findings and assessing real-world data (RWD) representativeness. Regulatory and HTA submissions require conclusions based on RWD to be generalizable to the overall treated population. Methods that generate robust estimates stratified by care setting are therefore needed to bridge the gap between study cohorts and the broader indicated population.

OBJECTIVES

- Validate a two-step methodology to generate representative epidemiological estimates in oncology using chronic lymphocytic leukemia (CLL) in Germany
- Estimate treated prevalence and incidence for RWD interpretation and HTA/regulatory use
- Provide a foundation for subsequent real-world evidence standard-of-care studies

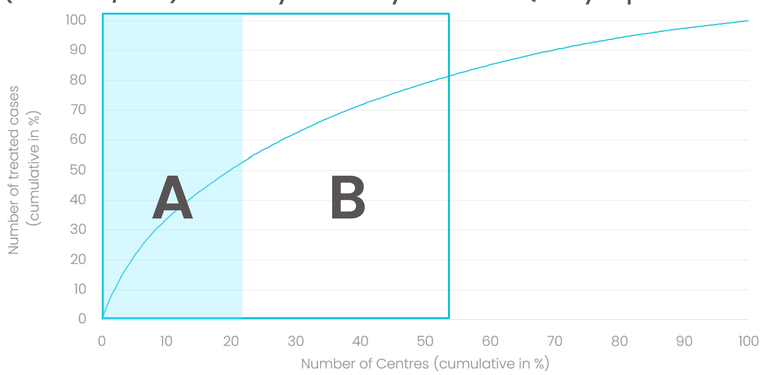
METHODS

A systematic approach combining public healthcare structural data with targeted epidemiological surveys.

Step 1: Health Care Structural Analysis (HCSA)

- Identification of all CLL-treating centers using public sources, classification into University Hospitals (UH), Non-University Hospitals (NUH), and Office-Based Practice (OBP/MCC)

Figure 1 : Identification of Care-relevant Hospitals by Treated CLL Cases (≥ 4 Cases/Year) in 2020 by ABC Analysis of GB-A Quality Reports.



- Grouping centers into A/B/C categories (ABC analysis) to identify highly care-relevant institutions treating ~80% of CLL patients (Classes A/B)

Validation Approach:

- Treated incidence (4.06–4.39/100,000) within the RKI-reported national CLL incidence (2.9–5.5/100,000)
- Hospital sector split (UH 22% / NUH 76%) consistent with G-BA data (UH 25% / NUH 75%)
- Patient journey: 6.7% UH contact consistent with 6% prevalence projection

Figure 2 : Validation of institutional distribution using G-BA quality report data and benchmarking of incidence against RKI cancer registry projections and HTA value dossiers.

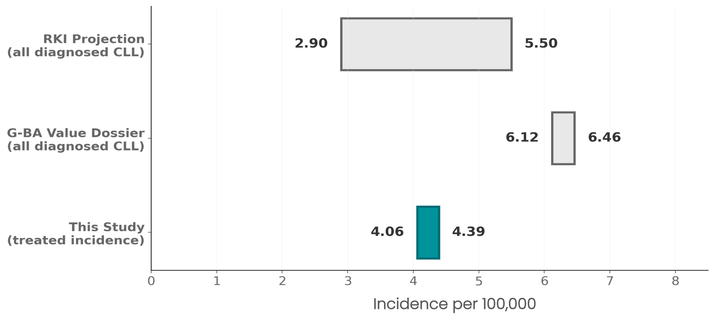


Table 1: Hospital sector split consistent with G-BA data.

Category	Study Cohort (196 patients)	National Quality Report 2020 (4,754 CLL Cases)
NUH (University Hospital)	150 (76%)	3,552 (75%)
UH (Non-University Hospital)	43 (22%)	1,202 (25%)
NUH + UH (Both)	3 (2%)	—

Step 2: Targeted Epidemiological Surveys

- Surveys in representative care-relevant centers across institution types
- Weighting by facility type and regional structure for national extrapolation
- Chart review data (n=682) used to scale half-year to annual estimates and derive treated incidence

RESULTS

- 321 highly-care relevant CLL-treating centers identified: 18 UHs (6%), 43 NUHs (13%), and 260 OBPs (81%)
- Care concentration: ~51% of hospitals treated 80% of hospitalized patients
- Epidemiology surveys: 61 centers, 1,631 patients
- Treated population projected estimates:
  - Prevalence: 11,382–12,189 (13.66–14.69 per 100,000)
  - Incidence: 3,388–3,657 (4.06–4.39 per 100,000)
- Care setting distribution: UH 6%, NUH 10%, OBP 84%
- Validation: Confirmed by chart review (n = 682); aligned with G-BA data and external incidence projections

Table 2: Summary of the HSCA CLL treatment in Germany and the sampling framework used to estimate the national treated population.

Parameter	Value
Highly-care relevant CLL-treating centers	321
University Hospitals (UH)	18 (6%)
Non-University Hospitals (NUH)	43 (13%)
Office-Based Practices/MCCs	260 (81%)
Care-relevant hospitals (A/B)	~51% of hospitals
Survey sample (centers)	61
Survey sample (patients)	1,631
Chart review sample	682

CONCLUSIONS

This methodology provides robust, reproducible estimates of the treated CLL population suitable for HTA and regulatory submissions. Systematic identification of care-relevant centers and proportional sampling support representativeness, while multi-source validation strengthens credibility. The framework is scalable across oncology indications and geographies and supports fit-for-purpose RWE generation.

List of abbreviations: G-BA = Gemeinsamer Bundesausschuss; HCSA = Health Care Structural Analysis; HY = Half-year; MCC = Medical Care Center; UH = University Hospital; NUH = Non-University Hospital; OBP = Office-Based Practice; QR = Quality report; RKI = Robert Koch Institut; TNXO = TriNetX Oncology

Download Poster PDF