When presenting the value proposition of its products to various constituents, life sciences companies need highly-accurate and timely evidence from both the physician and patient’s perspectives.

With patient input playing an increasingly important role in pharma decision-making, there’s an increased focus today on gaining a clearer picture of the patient from multiple angles. Although achieving a multi-angle view of the patient is highly desirable, getting there is highly complex.

In the past, producing a comprehensive view of the patient often required companies to conduct large-scale linked prospective studies. The difficulty with these types of studies is that they are not only time consuming – often taking one to three years to complete – but also very costly. Additionally, there can be challenges in recruiting enough patients to have adequate power for testing statistical significance. Moreover, there’s significant risk involved because companies really don’t know whether the evidence generated by the studies will be favorable until the end of long engagement periods.

The holy grail, per se, is to enable life sciences companies to secure the information they need without having to deal with a major time commitment, expense or the risk involved with large-scale prospective studies. Thus, there is a requirement for a new multi-angle view of the patient that provides companies with the opportunity to quickly examine the clinical view alongside the patient’s perspective – thereby delivering significant benefits in both insights and efficiencies.
Kantar sought to solve this challenge by developing the Claritis™ Solution, a breakthrough approach to real-world data analytics. Claritis links syndicated patient-reported outcomes (PRO) data and clinical data, allowing for better evidence generation, greater clarity and a more complete view of the patient than ever before.

**LINKING PRO AND CLINICAL DATA**

- **DEMOGRAPHICS AND LIFESTYLE** (National Health and Wellness Survey)
- **CO-MORBIDITIES** (National Health and Wellness Survey/ Electronic Health Records/Medical Claims)
- **SEVERITY OF DISEASE & QUALITY OF LIFE (PROs)** (National Health and Wellness Survey)
- **BEHAVIOR AND ATTITUDES** (National Health and Wellness Survey)
- **DIAGNOSIS** (National Health and Wellness Survey/ Electronic Health Records/Medical Claims)
- **TREATMENT** (National Health and Wellness Survey/ Electronic Health Records/Prescription Claims)
- **AFFORDABILITY AND INSURANCE COVERAGE** (National Health and Wellness Survey/ Medical Claims/Prescription Claims)
- **VISITS TO HCP (INCLUDING HOSPITAL)** (Medical Claims/Electronic Health Records)
- **LAB RESULTS** (Lab Data/Electronic Health Records)
- **BIOMETRICS** (Electronic Health Records)
- **GENOMICS** (Lab Data/Electronic Health Records)
The linked data method delivers many benefits to life science companies. Among them is a deeper, more holistic understanding of the patient, as the patient perspective is captured along with clinical information. That means life sciences companies can now obtain a longitudinal view of the patient’s journey and a more comprehensive view of the patient due to the richness of the dataset.

Second, by linking clinical data with PRO data, companies are able to conduct a single unified study instead of two to three disparate analyses. A unified study has greater value than conducting a separate claims or electronic health records (EHR) and PRO analysis because it allows for the uncovering of the relationship between clinical characteristics and PROs. For example, we can now see a clinical lab value alongside patient-reported health-related quality of life (HRQoL) data for the same person.

Finally, linked data replaces self-reported clinical information, which offers the benefit of eliminating self-reporting biases because the clinical information isn’t coming from self-report. In all, linked data saves time and has lower costs than prospective studies.

Linked PRO and claims data provides rich insights about how patients feel and function and this translates into unique opportunities for clinical intervention.

Kantar’s unique ability to look at the same individual in different data sets represents a major advancement in evidence generation for real-world research and supports a host of evidence generation scenarios, including:

1. Providing payer agencies with the required evidence to support reimbursement decisions, and supporting regulatory bodies that require evidence of real-world safety and effectiveness.
2. Generating critical information that’s used by other healthcare stakeholders, including healthcare professionals, patients and caregivers.

What’s more, Kantar’s Claritis Solution delivers a HIPAA-certified approach for linking de-identified clinical data with de-identified survey data. This approach uses highly accurate patient-level matching, with linking software that’s validated at error rates less than industry standards.

CASE STUDIES: LINKED DATA IN ACTION

Perhaps the best evidence of all is that we are already successfully applying linked data in various scenarios and applications. Following are several examples of our work with life science companies.
Case Study #1
Rapid Weight Gain and HRQoL: Results from Linking Electronic Health Records to Patient Reported Outcomes (ISPOR 2019)

THE CHALLENGE:
Body weight is a known determinant of HRQoL. We aimed to determine if nationally-representative, patient-reported survey data linked with clinical measures from EHRs allows for key learnings on differences in demographics and HRQoL associated with rapid weight change.

KEY FINDINGS:
Patient reported survey data and EHRs each have their respective strengths and limitations. However, by utilizing Kantar’s linked data, we combined PRO data on HRQoL with EHR data on body weight and acquired a more accurate picture of the patient that could not have been obtained from either data source alone.

Through our Claritis Solution, we facilitated a longitudinal analysis on the effects of rapid weight gain by combining an objective clinical measure with patient-reported HRQoL outcomes. The ability to link patient-reported survey data with clinical data from EHRs delivered a key finding—rapid weight gain, but not rapid weight loss, was associated with lower HRQoL.

We are especially proud that a poster highlighting the benefits of using Claritis was a Blue Ribbon Poster Finalist at ISPOR 2019 for real-world data analytics regarding rapid weight gain and HRQoL.

Case Study #2
Serum Uric Acid (sUA) and HRQoL in Patients with Gout and Hypertension (ISPOR 2019)

THE CHALLENGE:
Hyperuricemia or elevated levels of serum uric acid (sUA) is associated with gout, however there is limited data assessing the direct relationship between hyperuricemia and HRQoL. The objective of this study was to evaluate differences in sUA, HRQoL, health status and healthcare resource utilization in patients with gout, hypertension or both.

KEY FINDINGS:
Linking patient-reported outcomes with clinical measurements from EHRs provided valuable insights into the comorbidity burden among gout patients and its association with sUA and HRQoL. Evidence generated from this study revealed that gout patients with comorbid hypertension utilized more healthcare resources than patients with gout alone.

This study confirmed that Kantar’s Claritis Solution is providing rich data insights about gout sufferers that cannot be generated from PRO or clinical data alone. At ISPOR 2019, we detailed how our breakthrough offer is shedding light on the differences in sUA, HRQoL, health status and healthcare resource utilization.
Case Study #3
HBA1C Testing Frequency and HRQoL in Patients with Type 2 Diabetes - An Electronic Health Records Linked with Patient-Reported Outcomes Study (ISPOR 2019)

THE CHALLENGE:
Frequency of HbA1c testing is associated with Type 2 Diabetes (T2D) management and control, but limited data exists on the relationship between HbA1c testing and patient-reported measures such as HRQoL. We sought to understand whether linking patient-reported survey data with EHRs would provide a deeper understanding of behaviors related to T2D management, such as HbA1c testing frequency and its relationship to HRQoL.

KEY FINDINGS:
Patient-reported survey data and EHRs both have their strengths and weaknesses as tools to identify unmet needs in the management of diabetes, which may have HRQoL implications for diabetes patients. However, we found that linking PRO data on HRQoL with EHR data on HbA1c testing helped to reveal the relationship between diabetes management and HRQoL within a single data source.

Through Kantar’s Claritis Solution, we demonstrated that 1-2 HbA1c tests per year are associated with lower HRQoL compared with 3-4 tests per year, but not with 5+ tests per year. Thus, our results indicate that frequency of HbA1c testing is an indicator of disease burden and may reflect healthcare access, quality of care, and severity of disease. Thus, linking PRO data with EHR data can provide previously unseen insight into the relationship between HbA1c testing and HRQoL.

Case Study #4
The Clinical, Economic and Patient-Perceived Humanistic Burden of Inflammatory Bowel Disease (IBD) (In progress)

STUDY RATIONALE:
Inflammatory Bowel Disease (IBD), which includes both Crohn’s disease and ulcerative colitis, is a painful and debilitating disease that may lead to life-threatening complications. Utilizing linked data to capture both clinical information from claims and PRO’s may lead to a more complete understanding about the burden of IBD.

OBJECTIVES:
The primary objective of this study is to understand the relationships between clinical burden, patient-perceived humanistic burden, and healthcare resource utilization among IBD patients.

The secondary objectives are to examine the primary objective according to patient-reported severity (mild vs. moderate/severe); levels of patient activation (a measure of one’s knowledge, skill, and confidence for managing their health and healthcare); and by treatment type (conventional vs. biologics).
Case Study #5
Social Disparities in the Management of Type 2 Diabetes (T2D) in the US: Integration of Patient-Reported Survey Data with Clinical Lab Data
(In progress)

STUDY RATIONALE:
A key priority in minimizing the risks associated with living with T2D is to achieve an optimal disease management strategy that includes effective management of hemoglobin A1c (HbA1c) levels as well as other risk factors such as cholesterol and dyslipidemia. Certain key factors may play a role in suboptimal attainment of diabetes-specific goals, especially sociodemographic factors. Linked data with EHR lab values and patient-reported sociodemographic data allows for an examination of disparities in the management of T2D.

OBJECTIVES:
The primary objective of this study is to examine the sociodemographic disparities in T2D management via patient-reported data linked to EHR clinical lab values. Sociodemographic characteristics include age, gender, race, income, education, geographic region, community of residence (urban vs. rural), and other characteristics. T2D management includes clinical lab values, such as HbA1c control, diabetes quality measures (e.g., HbA1c testing, cholesterol testing), and hypoglycemia rates.

The secondary objectives are to examine patient-reported healthcare resource use and HRQoL as a function of T2D management.
LULU K. LEE, PHD
Vice President
Health Outcomes Research
Health Division, Kantar

Lulu K. Lee, PhD, is Vice President for Health Outcomes Research for the Health Division of Kantar. She currently leads a group of 10+ MS or PhD level researchers contributing to scientifically rigorous health outcome studies. Dr. Lee has contributed to the design of Kantar’s National Health and Wellness Survey studies, as well as custom non-interventional research studies, including medical chart review, patient-reported survey, and electronic health record studies.

Dr. Lee has experience in statistical analysis and dissemination of research results through abstract, poster and manuscript development. She has conducted research and published across a wide variety of therapeutic areas, including endocrinology, respiratory, pain, cardiovascular, oncology, central nervous system, women’s health, and urology. Dr. Lee was awarded “Best New Investigator Poster Presentation” at the ISPOR 19th Annual European Congress, Vienna, Austria (November 2016).

Prior to Kantar, Dr. Lee worked for the American Urological Association as Manager of Research. Dr. Lee was awarded her PhD in Social Psychology at Princeton University.

TOM HASKELL
Global Head of Innovation
Real-World Data & Analytics
Health Division, Kantar

Tom Haskell is the Global Head of Innovation for Real-World Data & Analytics at the Health Division of Kantar. In this role, he engineers new Kantar health data solutions, combining our industry-leading primary data collection infrastructure with current and emerging secondary data sources to provide unique offerings to our customers.

Tom has a deep background in providing innovative solutions to complex issues in the healthcare market. Previously, he worked for over 8 years at IMS Health (now IQVIA), leading the development of leading-edge cohort creation, analytics, and visualization tools for real-world data. Previous to his 15-plus years in the healthcare industry, he was one of the founders and lead architect of www.maquest.com, the first major online site to offer mapping and driving directions to the public.

Tom is also a renowned speaker on Big Data and Healthcare. Industry conferences where he has spoken on the subject include ISPOR, PMSA, PBIRG, ARF (Patient Journey), and ExL (Patient Experience).

Tom is a graduate of Harvard University, with a concentration in Applied Mathematics and Computer Science.

ABOUT KANTAR
Kantar is the world’s leading data, insights and consulting company. We understand more about how people think, feel, shop, share, vote and view than anyone else. Combining our expertise in human understanding with advanced technologies, Kantar’s 30,000 people help the world’s leading organizations succeed and grow.

For more information, please visit www.kantar.com/health.