Why is it Difficult to Evaluate European Treatment Patterns for New Drugs in Oncology?

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In the context of evidence generation, information on the treatment patterns for a given health condition should be ready for dissemination at the time of product launch and is a necessary step in the process of generating evidence that a new healthcare intervention is required. The need to understand a treatment pattern in oncology is substantially greater given the importance of the area in research and development and the complexity of treatments and indications. Cancer is by far the biggest therapeutic area for drug development. An overwhelming number of new treatments are considered very costly, exceeding $20,000 for a 12-week therapy. There are approximately 100 oncology drugs on the market, with the potential to more than double that number within seven years. A wide variety of drugs with different mechanisms will lead to an increase in multi-drug targeted therapies. It is expected that by 2020, at least eight of the top ten selling drugs will be biologics, and there could be up to 3,000 drugs in development.[1] In a European context, with increased healthcare budget scrutiny, understanding of the new drug placement will be of significance.

ASSESS BEFORE EXECUTING

Given that no pan-European data exists, appropriate data sources for assessment of treatment patterns in oncology, and respective strengths and limitations, need to be evaluated on a country-by-country basis. This should be related to the strategic importance of each of the markets to ensure that data from relevant

countries are available, as information from treatment pattern studies is often used for other health economic purposes. This requires a collaborative approach in which the investment in a study (and the approach to the design of such study) is a shared activity between health economics and outcomes, epidemiology, market access and marketing teams at the study sponsor. For instance, most of the new indications are defined by a patient being refractory to treatment; with such a target population there is often commonality between the epidemiological and health economic evidence generation needs (i.e., understanding the treatment patterns helps with both the morbidity estimates essential to establish the unmet need and health economic modeling activities).

Therefore, a careful evaluation of the specific data required for the analyses, as well as the identification of sources from which these data can be obtained, and a methodological approach to the analysis given the content of the data sources are necessary prior to commencement of the study *(see Figure 1)*. Ultimately, to achieve a representative view of the treatment pattern for any disease and in any population, the data source(s) selected should include data that mirror actual medical practice. Given differences in medication coverage and reimbursement within countries or health plans, however, the degree of appropriateness of each potential data source must be thoroughly evaluated early in the study planning phase.

DRG—THE "ENEMY" OF EVIDENCE GENERATION IN EUROPE

What makes matters even more complicated is the way that payment for treatment is carried out in most of the European countries. Unlike in the United States, hospital admissions are funded prospectively using Disease Related Group (DRG) tariffs. The system is being used in order to divide patients into a manageable number of homogenous groups and for monitoring and reimbursing hospital care, using DRG payment as the principal means of reimbursing hospitals. The grouping of patients and services is performed according to the following criteria: a) primary diagnosis, b) procedures, and c) comorbidities and complications (CC). All adopted DRGs have a similar structure, as outlined below.

1. Allocation to a Major Diagnostic Category (MDC)
2. Partition by type of treatment
   a. operation room/surgical partition
   b. medical partition
3. Split by procedures, comorbidities and complications, age

Even though each patient is unique, the application of a DRG-payment system practically groups patients together, as each DRG is representative of groups of patients who are expected to receive similar treatment and

KEY QUESTIONS TO CONSIDER WHEN DESIGNING A TREATMENT PATTERN STUDY IN ONCOLOGY

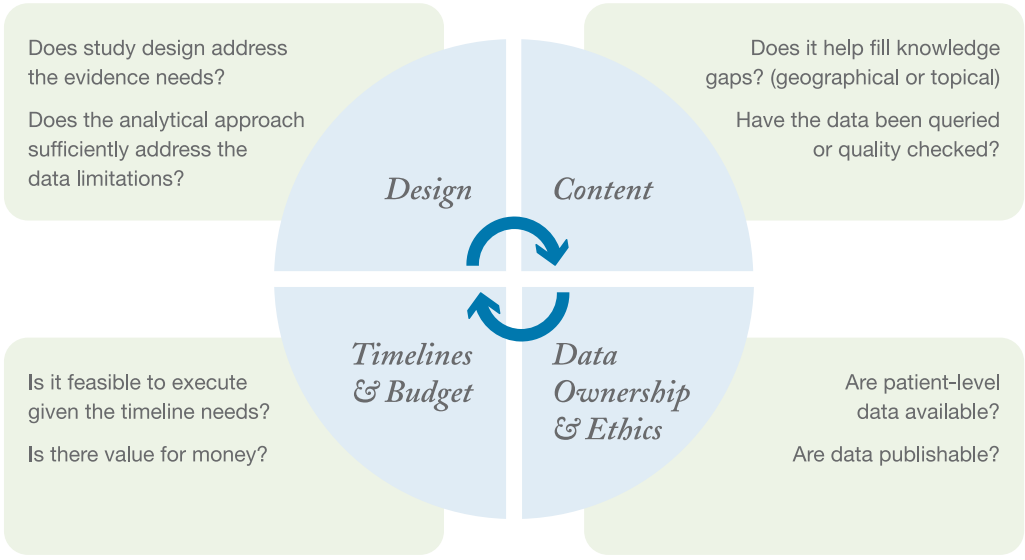

figure 1

consume equivalent hospital resources. In certain countries (e.g., Germany, UK, France and others), specific sets of high-cost services such as chemotherapy, radiotherapy, diagnostic imaging, renal dialysis, and high-cost drugs are separated from the core DRGs in order to ensure that services provided to heterogeneous patients belonging to different DRG-like groups are adequately reflected in the grouping process. Despite these efforts, several previous studies have demonstrated that DRG-based hospital payments do not always adequately reflect costs.[2–5]

Such a reimbursement system has an impact on what can be done when evaluating the treatment patterns in oncology in Europe. The use of DRG system, and the subsequent grouping of patients with similar diagnoses, impedes the identification and evaluation of all relevant hospital services at the detailed level as hospital services cannot be evaluated at the patient level. The use of very specific high-cost services (e.g., specific high-cost drugs, high cost laboratory tests and procedures like radiation) cannot be monitored when using a DRG system. For example, radiation therapy implicates additional expenses for oncologic patients which are not reflected in DRGs. Likewise, the complexity of chemotherapy treatments in terms of resource utilization and their complex sequence of cases for the same patients (re-admissions and sequential treatments) is also not reflected in most instances.

CAN A HOLY GRAIL BE FOUND?

The situation is not as dire as it appears. For care provided mainly in secondary care settings, chart review methodology is a good option in a European setting as it allows uniformity of study design across countries as much as possible given the research question. Chart reviews also allow evaluation of treatment patterns in specific populations, which might be difficult to identify without the review of detailed information typically available in medical charts. However, in order to be useful, a chart review has to be considered in the context of its purpose; data collection activities done for market research purposes can rely on a different methodology than those targeted at dissemination in peer-reviewed literature or inclusion in submissions to health technology assessment bodies. Finally, well-designed chart reviews are expensive and take time to complete, as observational studies struggle to get the necessary attention due to the focus of most clinicians on interventional studies.

Disease registries, when designed and initiated early, can also provide appropriate information. It should be emphasized, however, that most ongoing cancer registries do not include detailed information on treatments or their sequence. The lack of sequence information is also typical of data sources such as IPSOS or Oncology Analyzer. In some cases, as alluded above, due to the expensive nature of the treatments, especially in later lines of cancer therapy, payers have decided to track treatment patterns individually, outside of the DRG system. This, however, does not fully solve the problem, as not all treatments are captured, and earlier treatment lines would be particularly difficult to capture.

Although there is not one ideal option for identifying and evaluating treatment patterns, each offering its own benefits and challenges, the one constant is the need for a relatively sophisticated methodological approach. It is incumbent to the researcher to review the goals of the study and then choose the study design—data management, analysis, or the compilation of information from several data sources—that is the best fit to meet the stated goals.

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