JACQUES BIOT

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Thank you, Patrick and good morning, ladies and gentlemen. First of all, many thanks to Thierry de Montbrial for organizing this beautiful conference. I am learning a lot, hence thank you a lot and congratulations to your team.

I actually spent 30 years of my life working on market access issues in the healthcare system, trying to carve out the societal and economic value of therapeutic innovations. My talk today will address the difficulty of reconciling supply and demand in the ever-burgeoning field of healthcare services and products. I will also suggest potential ways to introduce some strategic drive to maximize the benefit for society in this domain which to date is guided by no invisible hand.

I will start with some facts and figures to pave the field with some simple landmarks.

The demand side is innumerable in real terms. The International Classification of Diseases established by WHO lists a total of 55,000 codes for as many disease definitions, among which about 7,000 to 8,000 orphan diseases.

In economic terms this concrete demand is made solvent, in most cases, by payers and/or insurers, whether public and monopolistic, or commercial and competing, who account for the major share of the expense. Overall, the public contribution to health expenditures reaches 60%, ranging from only 24% in low-income countries, up to 71% in OECD countries, and growing about everywhere at a pace faster by about 1% than GDP. Such expenses are almost systematically considered as a constraint regardless of their positive impact on the economy via the reduction of the burden of disease, which in itself would have a cost if left untreated, and via the added value of providers and suppliers in terms of employment and manufacturing.

Which leads us to look more in detail to the supply side, which is just as much scattered between various types of players.

Leading players in healthcare provision are in majority public (governmental) systems such as the National Health System (NHS) in the UK, or its equivalents in other countries. By contrast in 2017, the top 10 US provider systems were responsible for only 18 % of all inpatient days in the country.

In the provider universe, highly job intensive, profitability is typically in the low one-figure percentage in most countries, although some cleverly managed outliers provide much higher returns. And productivity is decreasing globally, as pointed out by several studies.

In the pharmaceutical industry, the current leader owns about 5% of the total prescription drug market. In the medical technology industry, the top ten companies own only 40% global market share. This comes in strong contrast to other similarly technology-intensive industries, such as the aerospace industry, or information and communication technology (ICT) industries, or the GAFAMs.

Contrary to care provision, pharma and medtech do enjoy lofty returns on capital, traditionally justified by the high degree of risk, but here again profitability has been decreasing over the years, a logical move as the pharma industry has progressively outsourced research and early development, and the risk that goes with it, to VC funded biotech companies.

What does the supply side provide the demand side with? Mostly innovation. As of end-2019, more than 350'000 trials were on course in the world, of which more than 280'000 aim to measure the effect of a given intervention. This number has grown from hardly more than 2000 studies back in 2000.

In summary: thousands of different diseases and millions of patients to be cured, thousands of care providers and hundreds of suppliers offering myriads of solutions, and one looming question: which economic regulation in-between to optimize the allocation of resources?

You can only regulate what you measure. This brings us to asking which metrics are available to gauge the relative burden of diseases, and to assess the effect of interventions.

Epidemiologists, clinical investigators, and health economists are left with extremely heterogeneous data to deal with. In order to be able to compare the burden of diseases on populations and on individuals, health economists have developed concepts of aggregate indicators such as Disability Adjusted Lifeyears (DALYs) lost, and Quality Adjusted LifeYears (QALYs). However, there is ample literature pointing to the ethical, methodological and contextual limitations of such ratings.

The gold standard to demonstrate that a novel health intervention is safe and efficacious is the so-called RCT (Randomized Clinical Trial) but the process of clinical trials, while totally unavoidable and scientifically undisputable, does not provide any clue, nor intends to provide any, on the preferability of addressing disease A rather than disease B, if resources are restricted and do not allow to treat both. I am not going to go into this, but this very often brings us to the ethical issue that Daniel will discuss.

Hence, when it comes to curbing healthcare expenses, payers are left without much clue as to how to do this in a strategic way, and most of them oscillate between a variety of cost-control schemes instead of considering expenses as an investment.

This is a reason why more and more voices call for a more rationale, data-based, socially acceptable strategy to be concerted amongst healthcare stakeholders, including patients, who should play a central role in these discussions.

Indeed, the patient feels that remedies should be proposed for every ill he or she suffers, or may suffer, from. Yet as an insured individual, or as a tax-payer, no patient is ready to contribute without limits to the ever-growing costs of the system. At the macro-level, no institution is vested with the role to define, and the power to enforce, a strategic distribution of limited resources to the innumerable health interventions that patients request individually. There was a talk earlier during this conference about the role of the WHO, but at the macro level there is no real institution vested with the role of defining, and the power to enforce, a strategic distribution of resources to the innumerable health interventions that patients request individually.

The time has come to reinforce research and education in epidemiology and health economics. The fast improvement of data collection and management, using high performance communication and augmented intelligence gear, should allow for a more informed, consensus-seeking, definition of public preferences in terms of health-policy, which would serve as a basis for the allocation of public resources to all healthcare players.

I would like to pay a specific tribute to my African friends in the room because many of them are exceptions to what I said about the lack of management. I am a great admirer of what Rwanda has achieved since the war to build an efficient and intelligent healthcare system, and I heard yesterday that Senegal is going in the same direction. I think that in this field and others, Africa may pave the way for a more efficient use of resources, and I would welcome this effort.

Thank you very much for your attention, and I'll be happy to take questions if any.

Patrick Nicolet, Founder and Managing Partner of Line Break Capital Ltd., former Capgemini's Group Chief Technology Officer

Thank you, Jacques. I will not summarize but just for the Q&A later on, you raised a question mark over matching supply and demand, the visibility of profit over time, regulating the unknown and patient versus client.