

# Glossary<sup>1</sup>

*Allocative efficiency:* For given levels of input prices, allocative efficiency means that the combination of inputs is optimized in order to minimize production costs.

*Altruistic preferences:* Hospital motivation to provide quality due to doctors' desire to improve patients' health.

*A pro-competition reform:* A reform that provides more incentives for hospitals to compete against each other by increasing their quality and/or by decreasing their prices (depending on the constraints imposed by the healthcare system).

*Cost sharing:* Cost sharing combines prospective and retrospective payments. It is another name for mixed payment (see below). The idea is that the risk of higher costs due to patients with conditions of great severity is partly borne by the regulator through the portion of retrospective payment.

*Demand elasticity:* A measure of how much the quantity demanded will change with respect to the change of one factor explaining demand. An example is the price elasticity of demand, which measures how the quantity demanded changes with price.

*Diagnosis related groups (DRG):* In prospective payment systems, the price schedule is based on a classification of stays in Diagnosis Related Groups and hospitals receive a fixed price per stay in a given DRG. The DRG classification has been set up in the USA by the Health Care Financing Administration. The general principle is to characterize stays prospectively, i.e. on the basis of the diagnosis at the time of admission, irrespective of procedures that are subsequently implemented. In reality, a large proportion of DRGs are based on procedures.

*Economies of scale:* This is a result of increasing returns to scale; the amount of resources used per unit of output falls at higher levels of output. It implies a

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1. All the authors of this volume contributed to this glossary. Many definitions are applications of general concepts in microeconomics to the context of hospital competition as used in the health economics literature.

falling unit cost as output increases, as long as input prices do not increase so as to offset the scale effect.

*Economies of scope:* These enable a firm to produce several goods or services jointly more cheaply than producing them separately. The simultaneous production of hospital care and medical teaching is an example.

*Efficiency rate:* This is equal to the ratio of actual production to the maximal possible production, for a given level of input. An efficiency rate equal to 80% means that hospital production is equal to 80% of the possible level of production.

*Fixed-price model:* Reimbursement of health care providers (such as hospitals and physicians) on a schedule determined by the government; in this case, hospitals consider prices as given.

*Herfindahl-Hirschmann Index (HHI):* This index measures hospital concentration within a given area. It is defined as the sum of the squares of the market shares of the hospitals within the area, with market shares expressed as fractions. It varies between the inverse of the number of hospitals in the area and 1. The higher the index, the more concentrated the hospital care market. This index is often used to measure the intensity of competition which is considered to decrease the more concentrated the market.

*Hotelling model:* This is a location model of competition, where the patient cares about the geographic location of the hospital (time and transportation costs to reach the hospital), in addition to the quality of care. The Hotelling model supposes that patients are uniformly distributed on a unit line and that hospitals are located at the extremes of the unit line.

*Increasing marginal cost of treatment:* The cost of treating a patient increases with the total number of patients.

*Intrinsic motivation:* Hospital motivation to provide quality due to doctors' self esteem or a concern for reputation.

*Logit Concentration Index (LOCI):* This index captures the potential market of a hospital within a given area. It varies between zero and one; the higher the index, the larger the potential market. This index is sometimes used to measure the eagerness of hospitals to compete against each other, as

this eagerness can be considered to depend on the extent of the potential market. The LOCI can be used to capture market power even when prices are fixed and hospitals compete on the basis of quality.

*Mixed payment system:* The payment combines a fixed price with partial reimbursement of the actual cost of treatment, i.e. the payment is a mix of prospective and retrospective payments.

*Moral hazard:* In the context of hospital payments, moral hazard refers to the fact that hospital managers can reduce their effort to minimize costs.

*Medicare program:* The Federal Health Insurance Program in the USA for people who are 65 or older, certain younger people with disabilities, and people with End-Stage Renal Disease (permanent kidney failure requiring dialysis or a transplant).

*Pay-for-performance (P4P):* Additional payments based on meeting targets linked to quality indicators.

*Price-cost margin:* The difference between the tariff received by the hospital to treat a patient and the marginal cost of treating the patient.

*Production function:* This function gives the maximum level of output that can be obtained for a given level of inputs.

*Productive efficiency:* A hospital is fully efficient if its production is situated on its production function.

*Productivity:* The volume of output obtained per unit of input used. For instance, in the case of hospital services, productivity can be defined as the quantity of hospital care provided per bed.

*Programme de médicalisation des systèmes d'information (PMSI):* A French program established in 1991 according to which public and private hospitals have to record procedures and diagnosis for each patient-stay, and transmit the related information to state services. Information on inpatient hospital stays is centralized and can be used for statistical analysis.

*Prospective payment system:* A system that pays hospitals a fixed price per stay in a given diagnosis-related group (DRG), irrespective of each hospital's actual cost. This provides a powerful incentive for managers to minimize costs.

*Reaction function:* The quality response of a hospital in reaction to a change in quality on the part of a rival hospital (in the case of competition on quality).

*Retrospective payment:* A payment per stay equal to the reimbursement of the actual cost of treatment.

*Risk adjustment:* A method for determining whether patient characteristics require higher utilization of medical services. Risk adjustment makes it possible to compare mortality rates in two different hospitals, even if the characteristics of their patient populations differ significantly. For example, one hospital may have an older population than the other. This will probably lead to higher mortality rates, not because care quality at the first hospital is inferior, but simply due to the age of the population that receives care there. Once mortality rates at the two hospitals are risk adjusted, the only difference that remains between the two populations, in theory, is the quality of care at the two hospitals.

*Salop model:* A location model of competition, where the patient cares about the geographic location of the hospital, in addition to the quality of care. The Salop model supposes that patients are uniformly distributed over a circle and hospitals are equidistantly located.

*Sluggish demand adjustments:* Slow demand responsiveness to increases in quality of a given hospital due to patients' habits or poor observability of quality.

*Supplier Induced Demand:* The effect that physicians, as the providers of service, may have by creating more patient demand than there would be if they acted as perfect agents for their patients.

*Soft budget:* When a hospital runs a deficit, governments tend to bail out the hospital.

*Stochastic frontier analysis:* The production function is the frontier defined by the maximal production levels that can be obtained for given levels of inputs. Stochastic frontier analysis is an econometric method that enables an identification and estimation of efficiency rates, through the specification of a random variable equal to the distance between observed levels of production and the frontier.

*Tarifification à l'activité (T2A)*: A reform that gradually introduced a prospective payment system in France beginning in 2004. Before the reform, public hospitals were funded under a global budget system, and private for-profit hospitals were reimbursed on a fee-for-service basis. Since the reform, both public and private hospitals have been funded using a DRG based payment system.

*Yardstick competition*: An industrial regulatory procedure under which the regulated price is set at the average of the estimated marginal costs of firms in the industry. If differences in costs between hospitals are caused only by moral hazard, a yardstick competition rule of payment offers each hospital a lump sum payment per stay defined on the basis of average costs observed in other hospitals for stays in the same diagnosis-related groups (DRG). This system mimics competition on a free market in order to provide incentives for efficiency gains.