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Isabelle Hirtzlin

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Combining budget cuts and efficiency of hospitals in France and the United Kingdom: the example of the tariff policy for day surgery.

Isabelle HIRTZLIN, Centre d'Economie de la Sorbonne (CES), isabelle.hirtzlin@univ-paris1.fr

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Abstract

Activity-based tariff for hospitals were first implemented in the US and extended to Europe in the 1990s. By paying a flat rate tariff by stay it promotes a reduction of its medium length. Therefore it should have theoretically increased the proportion of day surgery in hospitals. However, a tariff deduction was initially made for day surgery. This have contributed to the delay in the implementation of day surgery activities in several countries, including France and the UK. In the early 2000s, in order to promote day surgery which is reputed to cost less, the regulation bodies of both countries adopted a same tariff principle for day surgery and full hospitalisation, for a given list of surgical procedures. The UK went further in 2010 with the introduction of a best practice tariff. It opened the possibility to pay more for day surgery than for full hospitalisation. These measures try to conciliate allocative efficiency for the health care system and productive efficiency of hospitals. It had a limited impact on market shares between the public and private sectors in France. Nevertheless, nowadays, neither of the two countries could be sure that this policy will contribute to reduce the global budget allocated to surgery and satisfy the national budget constraints.

Introduction

Day surgery patients are hospitalised for a minimum length and can go back home the same day of surgery. Since the early 1970s day surgery has been developing rapidly in the United States (ANAES, 1997). The reasons for this change were freeing up hospital beds, which was an important consideration in the United States in the late 1960s, and reduce hospital costs since the early 1980s (Mahieu, 1997). During the same period, the use of day surgery was extended to Canada and in several European countries, including the UK, which has been the pioneer of this type of surgery in Europe (ANAES, 1997). Developments in these countries occurred for a variety of reasons: a lack of availability of beds in hospitals, increasing demand in connection with an ageing population, economic constraints, and changes in professional practices (Bontemps, 2004). In the era of stronger budget constraints by 2009, the main argument became that day surgery is reputed less costly for the national public insurance than the full hospitalisation, with no increasing of medical risk, and a better patient satisfaction (HAS ANAP, 2012). So encouraging the development of day surgery is now viewed as a mean to increase the efficiency of health care facilities.

Recently, reforms took place to increase the share of day surgery in the total hospitalisations for surgery. Even if other incentives and accompanying measures do exist, financial ones, based on a tariff policy were the major tool used in France and the UK.

In this paper we will first briefly describe the activity based tariff principle put in place in the 90s in Europe and show that its consequence was to hinder the development of day surgery. We then examine the two tariff methods (tariff principle for France and Best practice tariff in the UK) implemented in the two countries since 2009 to develop day surgery. We will finally question the consequences for the public-private market shares, and the ability of this measures to increase the efficiency of the health care provision, in a context of austerity.

Activity based tariff for hospitals and its consequences for day surgery

Since 1983, a new payment system for hospitals was introduced in the United States by *Medicare* (Federal American insurance for people over 65 years old and handicapped people) in the form of a group of diagnoses and procedures tariff. Classification into a group of diagnosis called DRG (*Diagnosis Related Groups*) depends on the patient's main diagnosis. This classification system for stays and payment based on a prospective activity-based tariff gradually extended to many western European countries during the 1990s (Germany, Austria, Belgium, France, Spain, Finland, Ireland, Italy, Norway, Portugal and Sweden).

Even if European countries initially opted for mixed funding, combining an overall budget or a daily payment with the activity-based tariffs, the last quickly became the main funding method for hospitals. Classification of hospital stays are more or less adapted from the original American DRGs (so called HRGs in the UK, GHS in France, G-DRGs in Germany, Nord-DRGs in Northern Europe, and HRGs in the UK ...).

National tariffs are calculated as the national average cost for each diagnosis group, on the basis of information drawn from hospitals' cost accounting systems. By paying hospitals for each stay of a diagnosis group whatever its length, activity-based tariff for hospitals do theoretically

promote a reduction in length of stay. Therefore they should increase the proportion of day surgery in the global activity of hospitals.

Nevertheless the length of stay is deemed to be a central indicator of hospital activity. For each stay, a mean length of stay (mean LOS) is calculated together with an interval of variation around this length of stay. If the length of stay is below the lower limit of the interval, it is deemed to be an "outlier".

The upper or lower limits of the length of stay which will define the length of stay of "outliers" compared to "inliers". Generally, the limits are based on the mean or median mean LOS and the boundaries are defined with the interquartile differences of length of stay (European Observatory on Health Systems and Policies, 2011).

The question of the cut-offs for length of stay arises for calculating costs of stays. In most countries the initial tariff setting methods for day surgery have followed those adopted for the "outlier" short term stays (European Observatory on Health Systems and Policies, 2011). In this situation, when day surgery co-exists with full surgery in the same diagnosis group, the day surgery was therefore treated in principle as an "atypical" length of stay; so the tariffs for day surgery stays were lower than those for full surgery (often 50%). This counter-incentive tariff method led hospitals to keep patients for at least a night in order to receive the additional tariff.

This have contributed to the delay for developing day surgery activities in several countries, including France and the UK.

Same tariff policy in France

France may well have a national healthcare system and the quality of which is the envy of many countries, it had one of the lowest rates of day surgery of any OECD country (30.4% in 1996 and 36% in 2009) (De Lathouwer 2000, Toftgaard, 2012). Even if there has been a medical and administrative consensus for some time about the necessity to promote day surgery, the first incentives were limited, until 2007, to the substitution of inpatient beds by outpatient facilities but with an unfavourable "exchange rate". More, the tariff for day surgery was calculated by applying a deduction of 50% to the full hospitalisation tariff.

Since 2007, new measures were gradually introduced to favour day surgery. First, pairs of GHS corresponding to short term hospitalisation (one night, low severity i.e. no comorbidities level called level 1) and day surgery (called J stays) were established. The impulsion to develop day surgery was only the taken in 2009 (Ministère de la santé et des sports, 2009) by introducing a same tariff policy between the day surgery J stays and the less severe cases treated by full hospitalisation (level 1). This same tariff principle was introduced for 18 GHS. It was calculated as the mean day surgery stay cost and costs of level 1 stays full hospitalisation weighted by the proportions of care found.

A first national target for the day surgery rate was set by the ministry of health, in 2010: the objective was an overall rate of 50% of day surgery procedures by 2016. So the principle of same tariff was progressively extended to 39 GHS in 2012, 47 in 2013 and 111 in 2014 which corresponds to the total of GHS with a day surgery J code (Ministère des affaires sociales, de la santé et des droits des femmes, 2015). Many surgical GHS have a severity level 1 but still do not have a J code. It means that they are not already practice by day surgery. In order to promote innovation in day surgery for these GHS, the French health ministry decided also, in 2014, to

pay the same tariff whatever the length of stay for all level 1 stays in surgery (it is the equivalent of the suppression of a lower length of stay).

The national target was revised in 2015 (Ministère des affaires sociales, de la santé et des droits des femmes, 2015) to 66 % by 2020. This rate is declined by regions (for example: 61.9 % for Limousin and 69.2% for Champagne Ardenne) but not by procedures.

For France, the financial incentive for day surgery development is thus strongly based on the implementation and development of a same tariff for day surgery and short stay full hospitalisation.

More, since 2008 the French National Health Insurance implemented also a new agreement procedure for surgery called MSAP (Mise Sous Accord Préalable). It involved initially 17 surgical procedures and extended to 55 procedures since 2015 which can be carried out on a day surgery basis. In practice this means that when a full hospitalisation is required for a patient for one of the selected procedures, the hospital must obtain an agreement from the French National Health Insurance medical department. The MSAP therefore checks that the procedure carried out is the most appropriate for the patient's clinical situation.

Other accompanied measures were put in place to favour investments in day surgery facilities for hospitals, and to relay the national incentive at a regional level through the regional health agencies (ARS).

Best Practice Tariff in the UK : A new paradigm

In the UK, the diagnosis-based tariff method is part of the *Payment by Results (PbR)* system introduced in 2002 (Abbott, 2011). Patient stays are classified into groups consuming the same type of resources known as "*Healthcare Resource Groups*" (HRGs). The last version of HRGv4 was introduced in 2009 and included more than 1,400 groups.

As in France, the tariff used for day and full hospitalization surgery was identical until 2009-2010. The identical tariff calculation method was exactly the same (i.e. based on a mean, weighted by activity, of the costs of each type of care). There is no restriction on the total volumes of surgical activity as the British Government is seeking to reduce waiting times and therefore maximize the increase in this activity (IRDES, 2009).

Since 2010, the tariff system for some procedures has been modified in order to incentivize more towards an increase in day surgery, with the introduction of the principle of the *Best Practice Tariff* – (BPT).

The principle of the best practice tariff was designed in the UK to encourage providers to produce high quality cost effective care. It is different from the average cost by HRG tariff. This payment system is based on measurement of the costs of the best practice rather than prices based on average cost. This national tariff is mandatory and applies throughout the country for both day care and full hospitalisation and to most external care procedures, for all care providers except for the independent treatment centres (ICTs), which are paid for the contracted services provided.

The calculation methods are different for each type of procedure, and there is therefore not a single calculation method. A specific approach has been developed for each tariff designed from best clinical practice and availability of quality data (England Department of Health, 2011).

The concept of the best practice tariff follows the publication the Lord Darzi (Darzi, 2008) report in 2008. The rationale for implementing BPT can be found in a 2000 London Office of Health Economics report about Benchmarking (Office of Health Economics, 2000). It is defined as "a comparison of practices and levels of performance of organisations in order to identify opportunities for improvement".

Four types of benchmarking can be distinguished.

- "internal" which compares similar processes within the same organisation;
- "competitive" which involves comparing organisations which are in direct competition. Payers can use the benchmark to create "pseudo-competitors" between organisations in sectors where traditionally there is limited competition. This type of benchmarking combined with relative performance based financial payments is called yardstick competition (Shleifer, 1985) and is used activity based tariff payments in US, the UK and France;
- "functional" which involves comparing the practices of organisations within a sector with those of other economic sectors;
- "generic" which compares the practice of an external comparator representing best practice in each operation carried out by the organisation.

According to this report, the most widely used traditional *benchmarking* techniques (competitive and functional) have weaknesses. As the good practice is not clearly identified, its dissemination of it could be very slow. This is particularly true for the public sector in which the jobs market is less fluid and does not facilitate skills transfer between organisations. So benchmarking is usually limited to seeking to improve the practices of those sites which are furthest behind. The Yardstick competition is also based on financial incentives, but most NHS care providers are not directly motivated by them (particularly public facilities or foundation trusts). Recognition within the organisation and the feeling of having produced good work may be more important. Financial incentives may thus be counterproductive.

Additionally several criticisms have also been made of the use of HRG reference costs to set the desirable cost level. These criticisms arise from the initial method used to calculate reference costs published in the United Kingdom in 1998, which was approximate because of the poor quality of the data collected.

To solve this questions, the authors of the London Office of Health Economics report made a number of recommendations for the British NHS and particularly using indicators which combined costs and quality. Quality should also be assessed using the case mix of each hospital (by age, gender, severity...). A lack of quality indicator leads providers to offer care services at the lowest cost, rather than efficient services for the population.

Overall, after reviewing the positive effects of calculating tariffs based on efficiency, the British Department of Health highlighted the difficulty of producing a list of tariffs based on the most efficient clinical practices. It did, however, recognise the need to use more standardised tariff scales (England Department of Health, 2007), particularly if best practice is to be adopted. This can improve both quality of care and efficiency. Best practice must then be evidence-based and changes in tariffs must be gradual. The example of day care compared with full hospitalisation was cited.

Application to day surgery

Day surgery is one of the areas in which benchmarking techniques could most easily be applied. It involves well managed, reproducible, widely performed routine techniques for which

variation in clinical practice is deemed to be low. In principle this make it possible to estimate standard use of resources, particularly in terms of time spent in the operating theatre (a cost estimate by operating theatre minute is generally used).

This qualitative and tariff benchmarking system is called the "*Best Practice Tariff or BPT*". The aim of the BPT is to provide structured tariffs to reimburse all providers in the same way, encouraging at the same time good quality practice. BPT was first introduced in 2010 for cholecystectomy and cataract surgeries (IRDES, 2009).

For the treatment of cataract, the determining factor of best practice involves treating patients effectively and non-piecemeal, carrying out all the preoperative investigations at the same time, using day surgery as the reference practice, and ensuring that all of the follow up investigations are carried out on a single day two weeks after the procedure.

For cholecystectomy, best practice was determined from published evidence in the literature and the BPT was designed to encourage day laparoscopic surgery, which was deemed to be the best practice to be used (NHS Institute for Innovation and Improvement, 2006). In order to establish best practice, an on-site visit (direct observation and interviews with 150 DSU staff and patients) was made to centres carrying out day surgery and was used to retrace the patient's current management process, which was then compared with a recommended process which was required to cover 95% of the cases treated, although some flexibility was available in exceptional cases.

According to the British Department of Health, the introduction of these "best practices" would make management more efficient and increase patient satisfaction.

In terms of tariffs, rather than being calculated from average costs, the tariff used reflected the cost of best practice which could be located either above or below the average cost. For surgery as the desired practice is day care, the national tariff would in principle be set below the tariff previously applied (i.e. calculated by average cost of both full hospitalisation and day surgery).

The introduction of the BPT was supported by other local measures in the UK, including as in France, default admission for any patient to day surgery rather than full hospitalisation surgery, recruitment of staff trained in day surgical practice and visits to the "best performing" Day Surgery Units (DSU) by staff working in poor performing units.

In addition, the national tariff would apply not only to the surgical procedure but also to the pre- and post-diagnosis care and to the post-operative follow up. If necessary, this involved breaking down the payment in order to promote the best care pathway between providers if this could be established from the evidence (England Department of Health, 2007) in order where possible to incentivise care outside of hospitals (the "*unbundling tariff*" principle). This tariff method was only introduced for cataract surgery.

The BPT was extended from 1st April 2011 to a list drawn up by the *British Association of Day Surgery* (BADS) of 12 surgical procedures (breast, hernia, orthopaedic and urology), three others were added between 2012 and 2014. In 2016, there was a recalculation of BPT prices based on revised transitional targets towards or at the British Association of Day Surgery (BADS) proportions for two procedures, where national performance has improved : operations to manage female incontinence and tympanoplasty (NHS, 2016).

The selection criteria for these procedures were based on the large impact, measured by a high volume of more than 5,000 annual admissions, large differences in practice between providers and national rates below those recommended by the *British Association of Day Surgery* (BADS), a significant impact in terms of health results (England Department of Health, 2011).

Evidence and clinical consensus should be available on the aspects of best practice whilst some differences were seen across practices (mostly relating to day surgery rates) between regions.

The tariff calculation method was based on a two stage calculation (England Department of Health, 2011). The first stage involved establishing the desired proportion of day surgery and full hospitalisation for one defined surgical procedure. The second stage involved separating the full hospitalisation tariffs from day surgery tariffs whilst observing the following conditions:

- the total cost of the two procedures could not exceed the “baseline cost” i.e. the total cost before the BPT tariff was introduced;
- for one procedure, the tariff for day surgery, deemed to be best practice, should be higher than full hospitalisation in a predetermined ratio;
- the day surgery tariff should be no more than the tariff obtained by combining day surgery/full hospitalisation tariffs from the observed day surgery rate.

Consequences for efficiency

The French and the British regulation history for day surgery is quite similar until 2010. From 2010 the UK went a step further with the implementation BPT. Studying for both countries the efficiency consequences of these measures and their impact on the rate of day surgery is interesting. It could especially help to determine if France should develop a BPT mechanism in the future.

In France, by increasing day surgery, the regulator sought to increase allocative efficiency (i.e. the distribution and allocation of global resources to the health care sector). Day surgery which is deemed to be less costly to the funder is supposed to reduce resource allocation to surgery and releasing residual funding for other activities in the health care system, either to more complex surgical activities or other health care procedures.

Obtaining allocative efficiency gains, however, is partly incompatible with the principle of same tariffs which was adopted. If the tariff for day surgery is equated to that of full hospitalisation surgery, both types of procedure would cost the same to the National Health Insurance. The system would therefore no longer achieve cost efficiency gains by switching a surgery by another. Similarly, if the hospital takes a strictly "income-based" approach its income for day surgery will increase in the same way as in full hospitalisation because the tariff is identical. Day surgery could even be more costly for the hospital as it may require expensive investments to optimise its patient flow, while the cost of the surgery procedure itself is unchanged.

Nevertheless, because of its calculation method (weighted mean of costs), which gradually reduces the tariff towards the cost of day surgery based on the proportion of procedures carried out as day surgery, same tariffs may still dynamically improve the allocative efficiency. Indeed, when the great majority of procedures will have shifted to day surgery, the same tariff level would become very similar to the day surgery tariff and would potentially reduce the overall financial burden of these procedures to the French National Health Insurance, compared with the initial situation. In conclusion, the rule for calculating the tariffs could achieve allocative efficiency only when the day surgery development phase will be completed.

Another point has to be taken into consideration, day surgery is accelerating the patient flow compared to full hospitalisation surgery. It could thus increase in the overall number of surgery procedures performed in hospitals because increasing the volume is at their financial interest, leading to an increase in health expenditure for surgery. This may be a desired objective in

health care systems where the facilities are considered too low, such as in the United Kingdom, but this was not a starting hypothesis for France.

In conclusion we can say that the ability of the mechanism implemented in France to improve allocative efficiency is time consuming and finally uncertain.

Regarding productive efficiency (producing good quality services, at the lowest cost), activity-based same tariffs for day surgery produce gains through a yardstick competition mechanism. Hospitals which have costs of production over the applied same tariff are pushed to find processes which reduce their costs. Because of this, the same tariff system incentivises hospitals either to reduce their full hospitalisation surgical or to shift their conventional surgery towards day surgery activities.

Regardless, for France the same tariff system does not guarantee achieving a satisfactory production efficiency level for day surgery, because the same tariff calculation method is still based on average costs and not the costs of the most efficient surgical units (that is those which are on the frontier of productive efficiency and which have optimised their production processes and patient flows).

It would therefore be necessary to propose in France ways of improving the tariff model in order to combine the improvement of allocative and productive efficiency simultaneously. But does the UK BPT can solve both?

The *Best Practice Tariff* was clearly designed to improve productive efficiency. BPT relies on learned societies establishing a target day surgery rate which is then introduced into the tariff setting mechanism. The BPT is based on defining good practice using professional standards to reduce redundant or unhelpful investigations, readmissions, linkage to day care and maintaining surgeons' technical skills.

Nevertheless, this method helps to improve the efficacy and quality of care but not strictly to reduce costs, which may ultimately be higher. The tariff calculated from the costs for BPT may therefore be higher than previously, with higher quality. The impact of BPT on productive efficiency therefore depends on the cost-result differential achieved thanks to quality improvement.

In order to simultaneously increase allocative efficiency, the NHS had to add a condition: the BPT tariff for day surgery must be beneath the previous same tariff set based on the average weighted observed tariff for conventional and day surgery, and should be above the average costs of day procedures alone.

Overall, the British system attempts to reconcile three different objectives in a single tariff system in a context of waiting list management and austerity: improvement in productive efficiency via its best practice component; improvement in allocation efficiency by setting tariffs above the average costs found for both practices; giving greater incentives to day surgery by establishing target rates by procedure and taking account of these rates in the tariff system.

Nevertheless, by setting the day care tariff deliberately above the full hospitalisation surgery tariff the UK model does not allow the expected productive efficiency gains to be achieved as the tariff set for day surgery is deliberately above its costs. It introduced a surplus for facilities which have greatly increased day surgery, at the risk of limiting their search for productive efficiency gains in day surgery.

The aim of the British policy maker in this case was clearly a different issue than the aim of the French regulator. It prioritised care quality improvement (better day care practice) and the

introduction of strong tariff incentives to encourage replacement of one activity by the other. This occurs to the detriment of seeking gains in productive efficiency from a costs perspective in day surgery and gains in allocation efficiency are limited (constant budget reasoning).

Impacts on privatisation

The impact of same price or best practice tariffs may differ depending on the status of the organisation (public, private not for profit or private for profit) to which they apply. Private for profit hospitals sought to maximise their revenue and control their costs. They are therefore more likely to respond to the financial incentives introduced and to increase day surgery rates. Setting tariffs for the two types of care at a similar level would therefore result in promoting day surgery in the private for profit sector but not in the public sector which is less sensitive to financial incentives, as maximising profit margin is not one of its objectives. More Private providers are cherry-picking lucrative services to boost their profits leaving the public sector with less money to provide comprehensive care.

In France, the lucrative private sector occupies a large part in surgical activity (56% of the whole surgical procedures in 2015 according to the Technical Agency for Hospital Information statistics - ATIH). The rate of ambulatory surgery is increasing in both sectors but is still more important in the private for profit one (from 51.8 in 2011 to 59.6 % in 2015) than in public hospitals (from 35.4 % in 2011 to 42 % in 2015), but the market shares between the two sectors for day surgery remain relatively stable (65 % for the private for profit sector and 35% for the public one). The same tariff policy did not really contributed to the development of the private sector for day surgery because most of the surgical procedures were already widely practiced in this sector. But this has contributed to the shift from classical surgery to ambulatory surgery in the public sector, so the public sector has partially caught up its delay in day surgery. For the UK the impact of the best practice tariff to the development of the private sector is difficult to measure as the BPT is still limited to 15 surgical procedures. The NHS purchase of private acute hospital care has globally risen (13% of all non-emergency surgery on UK residents was privately funded in 2011 according to LaingBuisson,, 2013), so, as the best practice tariffs for day surgery are now very attractive, there is no doubt that the private sector will primary develop on these surgical procedures.

Conclusion

It is possible to consider tariff as an allocative instrument in a budgetary constraint context. In this situation the tariffs need to be funding instruments which guarantee that an envelope dedicated to health care is respected. This is the position adopted by France in accordance with the global budget ceiling for health care voted each year by the Parliament (called “Objectif National des Dépenses d’Assurance Maladie” or ONDAM). In that case, the tariff system should be designed to distribute funding equitably between facilities and guide behaviours to attain allocative efficiency.

Nowadays, the calculated tariffs which only take account of budgetary restrictions no longer represent the underlying financial reality of care provision costs. If still in used, this model would need to be supported in parallel with mechanisms to incentivise productive efficiency. In this situation standardised information collection on medical practices and costs (representative sample, reduction in the time difference between costs and tariffs, harmonization of analytical accounting, etc.) should be improved, tariffs should be set at the

efficient cost, i.e. the cost deemed to be the minimum profitable cost for a centre working under optimal conditions.

The introduction of efficient productive cost tariffs has also a severe limitation. It is not readily compatible with the global budget regulation. Even if the policy conducted in France and the UK seems to be a success concerning the extension of day surgery the results are mixed concerning quality improvement in the UK (Gershlick, 2016) and not only due to the tariff mechanism. Today, nor France neither the UK could be certain that day surgery will cost less for better quality than full hospitalisation surgery to the health care system.

The French and British examples showed that allocative and productive efficiency are not always compatible and could difficultly obtained thanks to a unique tariff principle. Before implementing a BPT tariff principle, the French regulators will have to clarify their objectives concerning productive efficiency and be conscious that it is not often compatible with the allocative one.

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