Paying the medical specialist: the eternal puzzle: experiments in the Netherlands
Mot, E.S.

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Appendix 4.3 Calculation of the parameter revenues

As stated earlier, we use the term ‘parameter revenue’ to indicate an amount of money that corresponds to an element of production, e.g. a new patient.

Parameter revenues at the start of the experiment

For the period before the start of the experiment the official COTG-tariffs for medical specialists were used as parameter revenues. For privately-insured patients, the COTG determined tariffs per visit for first and repeat visits to the outpatient department. These tariffs could be looked up in the COTG documentation. For publicly-insured patients a different system was in place. A GP who sent a patient to a specialist could choose between a ‘short card’ and a ‘year card’. The short card was introduced for cases where the need for specialist attention was expected to be short term. The period of validity was one or two months depending upon the specialty. A year card covered treatment by the specialist for the entire year. We used the short card-tariff as the parameter revenue for a first visit. For repeat visits of publicly-insured patients the parameter revenue was set to zero, as there was no separate tariff per visit.

There was no specialist tariff for a clinical admission as such. Specialists could be paid for admitted patients in either of two ways: individual services performed during the admission were compensated or – when no services were carried out – compensation consisted of a tariff per patient-day. This system was used for both public and private patients, with different tariffs per service and patient-day.

For day-treatment there was a ‘public’ tariff for the specialist but no private tariff. This did not mean that there was no remuneration for the work of the

169 The tariffs per 1 April 1995 were used, since it was not always possible to undertake the first data collection round before the official start of the experiment (see Section 4.2.3 on practical decisions).
170 We might have chosen to use the tariff for an additional card (the difference between the tariff for a year card and a short card) as the parameter revenue for a repeat visit. However, within the period of the short card, a repeat visit does not bring in any extra money. And, beyond this period, only the first repeat visit brings in extra money. Therefore we chose a parameter revenue of zero for repeat visits of publicly-insured patients.
specialist. Usually services would be performed during day-treatment, for which there were separate fees.

**Parameter revenues at the end of the experiment**

At the end of the experiment lump-sum budgets for the specialists were in place. In exchange for these lump-sum budgets a certain amount of production was expected. This production was measured and monitored using different production parameters for different projects, as described in section 4.1. This means that it is possible to calculate an amount of money that corresponds to an element of production, e.g. a new patient. For this calculation a number of assumptions had to be made. We called this amount of money the parameter revenue to distinguish it from a traditional tariff. The name ‘parameter revenues’ seemed logical, since different production-parameters each had their own revenue in the different projects. The larger this parameter revenue is, the greater the financial incentive to the doctor of a new patient is. First, a higher parameter revenue leads to a greater probability of a larger budget in the following year, depending upon the exact arrangements for adjustment of the budget in a project. Secondly, the higher the parameter revenues, the larger the contribution is to meeting the arranged production targets.

The parameter revenues at the end of the experiment were the same for publicly and privately insured patients. Between the different experimental projects and specialties the parameter revenues differed during the experiment depending upon the financial arrangements in the projects (the choice of production-parameters, the weights for the production-parameters and the adjustment procedure over time).

Parameter revenues were calculated for all production parameters that played a role in the different experimental projects:

1. first visit of a new patient at the outpatient department;
2. repeat visit at the outpatient department;
3. clinical admission (for more than one day);
4. day-treatment;
5. a patient-day in the hospital (for each day during an admission).

The parameter revenues were calculated as follows:
1. determine the variable part of the lump-sum budget per specialty for each hospital;
2. determine the number of production units (see below) that was performed in exchange for the lump-sum budget;
3. calculate the amount of money per production unit;
4. calculate the amount of money per production parameter (e.g. a new patient).

In the first step, an assumption had to be made because the lump-sum budget per specialty was not known for each project. Since the macro-lump sum per full-time equivalent was known for each specialty, we assumed that these could be used to calculate the lump-sum per specialty per project. To do this, the macro-lump sum per full-time equivalent was multiplied by the number of full-time equivalents for each specialty in each project. The lump sum calculated in this way was multiplied by the proportion of the budget that was variable, since in some projects the budget was partly fixed. For example, for cardiology, the macro-lump sum per full-time equivalent was 522,466 guilders. In the Medisch Centrum Alkmaar, the number of full-time equivalents was 6.5. The budget was 100% variable. This means that the lump sum for cardiology was approximately 3.4 million guilders, all of which was variable.

The number of production units was calculated by using the weights that were agreed by the individual project to weigh together the production parameters, e.g. for cardiology in the Medisch Centrum Alkmaar a weight of 1 was used for the number of new patients (5185); a weight of 0.5 for the number of day-treatments (367); and a weight of 1.1 for the number of clinical admissions (2136) (see Appendix 4.2 for the weights used by the different projects). This yields a total number of production units of 7718.

The amount of money per production unit was calculated by dividing the figure derived in step 1 by the figure derived in step 2 (3.4 million guilders divided by 7718). For cardiology in the MCA, this was 440 guilders. The amount of money per production parameter was calculated by multiplying by the weight of a production parameter. For example, for cardiology in the MCA, the parameter revenue of clinical admissions is 484 guilders: 440 guilders per production unit times a weight of 1.1.

To illustrate the difference between the projects, the calculation for clinical admissions for cardiology is also described for the Schepersziekenhuis in Emmen.
For cardiology in the Scheperziekenhuis, the same macro-lumpsum per full-time equivalent is used as in the MCA, i.e. 522,466 guilders. In the Scheperziekenhuis, the number of full time equivalents was 3. The budget was only 30% variable. This means that the variable part of the lump sum for cardiology was only about 0.5 million guilders (522,466 guilders times 3 fte’s times 30%).

The number of production units was calculated by using the weights. For cardiology in the Scheperziekenhuis, a weight of 1 was used for the number of new patients (4589); a weight of 0.25 for the number of repeat visits (6614); a weight of 0.2 for the number of day-treatments (306); and, a weight of 2 for the number of clinical admissions (1732). This yields a total number of production units of 9768.\footnote{This calculation illustrates not just the difference in weights, but also that Emmen seems to have a higher production per FTE. This may point to a higher productivity of specialists in Emmen, but there can also be several other reasons. For example, it may be connected with a different intensity of support by assistant-physicians or a different amount of time spent on direct patient-activities per specialist.}

The amount of money per production unit was calculated by dividing the variable part of the lump sum by the number of production units. For cardiology in the Scheperziekenhuis, this yielded 48 guilders. The amount of money per production parameter was calculated by multiplying by the weight of a production parameter. For cardiology in the Scheperziekenhuis, the weight of clinical admissions is 2, so the parameter revenue of clinical admissions is 96 guilders (48 guilders times 2). This is an example of the magnitude of differences between hospitals in parameter revenues. The largest difference for clinical admissions for cardiology is between the MCA where the revenue is 484 guilders and the Ziekenhuis Lievensberg and the st. Maartens Gasthuis where the revenue is 0, since clinical admissions are not production parameters in these...
Only new patients are counted. The revenues for clinical admissions and other activities are included in the revenues for a new patient. In this respect, this system resembles the DBC-system (the Dutch version of DRG) that will be introduced in the Netherlands (see Chapter 9).

\[172\] Naturally where a production parameter did not play a role in the adjustment system of a project, the parameter revenue for that parameter was set to 0.