1 Introduction

1.1 Background

At the beginning of the 1990s there had been problems for many years in the Netherlands with the payment system for medical specialists and the cost of specialist care. The payment system was largely fee-for-service (FFS). The government was striving for cost control, but essentially had no means to reach this goal with regard to specialist care. An agreement about a fixed macro-budget for specialists failed to resolve this problem, since there was no mechanism to control the growth of the number of services. The specialists became increasingly unhappy with all the discussions about their income. The fact that no solution could be found at the national level inspired specialists, hospital managers and health insurers to enter into consultations, locally or regionally, about a solution for this problem in 1993. The parties hoped to find this solution in abolishing the FFS system and the introduction of budgets at the local level for specialist care. These budgets were combined with production-agreements with the specialists in order to maintain the relation between income and effort. Within a given year, the budgets were fixed. For the upcoming year, the budget depended upon the realised production in the current year and/or upon the new production-agreements (depending upon the specific arrangements in a local project).

The Dutch Ministry of Health was very much interested in the local negotiations since they could provide a solution for the problems described above. The Ministry gave a subsidy to five of these local projects which met certain conditions, in order to experiment with the new payment system for specialists. These five local projects together were called the ‘Experiment Specialistenhonorering’ (ESH) (Experiment with the Payment System for Specialists). The experiment concerned not just the payment system but also efficiency and quality projects. The five local projects in the experiment were the

1 Casparie dates the start of the problems back to the early 1970s (see Van Kemenade and Bakx, 1996).
subject of an evaluation study commissioned by the Ziekenfondsraad (ZFR)\(^2\) (at the request of the Ministry of Health) and carried out by the SEO (the Foundation for Economic Research of the University of Amsterdam) and the research bureau Ipsos Facto. This evaluation study is the basis of this monograph.\(^3\)

### 1.2 Research questions

Cost control and ending the discussions about the cost of specialist care were not the only goals of the experiment. Other goals were: increased efficiency, better quality of care, accessibility of care and harmonisation of the interests of the hospital and the specialists. The FFS system was considered by many to be a disincentive to the efficient treatment of patients, since efficient treatment could lead to a decrease in income for the specialist. So it was expected that the introduction of budgets would improve efficiency as well as stop discussions about the specialists' income. For example, when production-agreements are made in terms of the number of new patients to be treated in a year, it is in the interest of the specialist to treat each new patient as efficiently as possible. This would mean that either more patients can be treated in a year or the specialist has more leisure. An improvement in the quality of care was pursued mainly by way of projects aimed at modernisation of care as well as at increased use of standards, efficiency and transmural care.\(^4\) It was expected that stopping the financial discussions would leave more time and energy for such projects. Accessibility of care could be promoted by working more efficiently in the face of increasing demand for health care. Harmonisation of interests between the hospital and the specialists was considered necessary since the hospital budgeting system gave the hospital quite different financial incentives than the specialists had with FFS. For example, to the specialists it made no difference whether they treated a patient during a clinical admission of several days or in day-treatment. For the hospital, however, this made a big difference, since the fee for day-treatment was much lower and the difference in fee was, according to the

\(^2\) At that time, he Ziekenfondsraad was the organisation that supervised the Dutch sickness funds. See Chapter 3 for an explanation of the institutions in Dutch health care.

\(^3\) See for the report of the evaluation study: SEO and Ipsos Facto (1998).

\(^4\) ‘Transmural care’ is care in which the responsibility is shared by several parts of the health care sector, for example the GP (primary care) and the hospital (secondary care).
hospital, not offset by a difference in costs. One way to bring about the desired harmonisation was to use the same parameters that were used in the hospital budgeting system in production-agreements with the specialists.

The Zfr formulated the quality and efficiency goals of the projects as 'gepast gebruik' of care. Translated, this is 'appropriate use' of care. Since the Zfr's definition is broader than the internationally-used concept 'appropriate care', we call it 'suitable use of care', to distinguish it from the narrower concept.

The Zfr defined 'suitable use' as:

- effectiveness: decisions about the use of health care lead to optimal health increases;
- efficiency: a specified quality of care is reached at the minimum cost;
- cost control: the extent to which the necessary means can be controlled.

Effectiveness, as the Zfr uses the concept, is a medical-technical concept that relates to the result of medical action. According to the Zfr there is no overuse or underuse of care when medical decisions are effective. This is not meant to be an efficiency-related concept, as the emphasis is on the health-results: overuse or underuse of care may harm the patient. So in some cases suitable use may cause an increase in the use of care. The second aspect concerns cost-efficiency: no waste of inputs (technical efficiency), the cheapest combination of inputs, and the optimal scale of production. For an efficient use of care it is necessary to have information about cost-effectiveness. Efficiency not only includes the method of diagnosis and treatment but also the organisation of care and where the care is given within the health care sector. Cost control concerns not just the income of health care providers but also the other costs they incur in diagnosing and treating patients (hospital costs, drugs, paramedical assistance, etc.).

The evaluation study did not address all these elements in depth. Quality of care is of course very important. This is a broad concept. We include process- as well as outcome-measures of quality in this concept and distinguish three aspects: the timeliness of care, the medical-technical quality of care, and the patient-satisfaction. The timeliness of care was analysed in the evaluation study in the form of waiting times. The medical-technical quality of care was not studied

5 Ziekenfondsraad (1993).
directly but only included in interviews with specialists and other concerned parties and surveys among hospital personnel. Also, the analysis of patient-data gives an indication of the effects of the experiment on quality. The quality of care as experienced by the patients themselves was included in patient surveys.

The (limited) conclusions about quality that we can draw from this study are the following. The experiment seems to have increased waiting times in some hospitals and had a mitigating effect in others, so the influence on this aspect of quality is mixed. According to interviews with the parties in the experiment (specialists, hospital managers, health insurers), group discussions with the primary care sector and surveys among hospital personnel, there was largely no change in medical-technological quality of care. The shift that took place to the primary care sector with regard to chronic patients or follow-up of hospital treatment was generally seen as well-considered. A small number of specialists were concerned about the fact that check-ups were more often left to the GP or to the patients’ own opinion as to whether this was necessary. And some people in the primary care sector had some concerns that sometimes discharge from the hospital was not very well organised (no consultation with the GP, not enough care in the home situation). Analysis of the patient-data by diagnosis indicates that quality of care was not threatened by the changes that took place. For example, the admission rate decreased, generally speaking, but this was not the case for a serious complaint such as suspected malignant neoplasms. Moreover, the patient-perception of the quality of care did not change: the high level of satisfaction that was reported at the start of the experiment was maintained at the end of the experiment.

So, apart from an increase in waiting times in some hospitals, the experiment does not seem to have had an unfavourable influence on the quality of care. However, as stated, no complete analysis of the quality has been made. In the thesis, only the change in waiting times is described.

With regard to efficiency, very detailed information about the process of diagnosis and treatment was collected, but this does not mean that conclusions can be drawn about a change in total cost. For example, the experiment

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6 In this text the word 'complaint' refers to (the symptoms of) an illness, disease, disorder or impairment, not to patient dissatisfaction with some aspect of health care.
7 The admission rate increased for this complaint.
stimulated a shift from secondary care to the primary care sector. It is not known exactly how much costs have decreased in the hospital because of this and increased in the primary care sector (e.g. at the GP and in home care). We do know what changes took place in, for example, the admission rate for certain complaints and for certain hospitals, and these changes clearly indicate an increase in efficiency. However, since we can not establish this on the basis of detailed cost information, it would be more accurate to call this “economical use of care” rather than efficiency. We define ‘economical use of care’ as the ‘least intensive or specialised form of care that can be used to give the necessary treatment’.

This means that, provided it is similarly effective:

- day-treatment is more economical than a clinical admission;
- treatment at the outpatient department is more economical than day-treatment;
- a shorter stay in the hospital is more economical than a longer stay;
- less diagnostics is more economical than more diagnostics;
- treatment by the GP is more economical than treatment by a specialist;
- treatment of people who just need care is more economical in a nursing home than in a hospital.

Note that ‘more economical’ does not necessarily mean ‘cheaper’ in this definition, though it seems likely to be cheaper in many cases.

The third element of ‘suitable use of care’ is cost control. From a welfare-theoretical point of view, this is a less interesting concept than ‘efficiency’ or ‘economical use’ of care. The interest is not so much on the total amount of money spent but more on an optimal relation between the costs made and the benefits achieved. However, for the practical functioning of a budget-controlled system of health care, the possibility of cost control is important. The introduction of lump-sum budgets for medical specialist has greatly improved the controllability of the cost of specialist care. But there were also unfavourable consequences. In the rest of this story we will focus on the total of consequences and not on cost control individually.

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8 This is a simplification of the concept that is necessary to handle it empirically.
Considering the range of expectations, there are several research-questions that need to be asked. First of all, since the local projects had a great deal of freedom in making their arrangements within common boundaries, we considered the question:

1) What is the content of the agreements made in the different projects?

Second, given these agreements, there were differing expectations with regard to their effect upon the treatment of patients and the efficiency. Many participants among the hospital management as well as the health insurers believed that efficiency would improve when the FFS system was abolished. Among the specialists themselves, there was an important group who stated that such changes would not take place, since they were not influenced by financial considerations anyway, only by medical considerations.

So the second question is:

2) Does the experiment have an effect upon the treatment of patients?

And the third related question is:

3) If so, what is this effect (in terms of actual changes, but also, as far as possible, the effect on suitable use of care)?

The evaluation study that was commissioned by the Zfr, had another important research-question concerning the process of change. This question was: How are the new payment systems introduced in the different projects and what favourable and unfavourable circumstances for a successful introduction can be distinguished? However, this thesis concentrates on the theoretical underpinnings of the effect of financial incentives and on the effect-evaluation, and the matter of the process-evaluation is not pursued.

1.3 Contents

Chapter 2 is concerned with the theory about the effect of a change in the payment system for physicians. Important results from the literature about the theoretical and empirical effect of a change in payment system are described. On the basis of this literature, a number of general hypotheses are formulated.
In Chapter 3, first of all the organisation of Dutch health care before and during the experiment is described. The subjects are: the role of institutions and the government in Dutch health care; the way health insurance is organised; the gatekeeper role of the GP; and, the organisation of specialist health care. Attention is given to the relation between medical specialists and the hospital: the budgeting system of the hospital and the payment system for medical specialists that existed before the experiment started are described. After that, it is shown why there were problems with the previous payment system for medical specialists and how these problems gave rise to the experiment.

Chapter 4 is concerned with the financial arrangements in the five local projects that were part of the experiment. Both common elements and differences between the projects are described. Details of the agreements in the individual projects are given in Appendix 4.1. Also in Chapter 4, the design of the research project is outlined.

Chapters 5 to 8 are the empirical part of this thesis (see Figure 1.1), in which estimation results are given for the effect of the change in the payment system on several aspects of the treatment of patients. Chapter 5 is concerned with the admission rates for patients with a new complaint who come first to the outpatient department. Admissions are an important part of the hospital production and also one of the more expensive parts. The question is whether the changes in the payment system and the other changes during the experiment have influenced the admission rate, and if so, in what direction. In Chapter 6, the duration of stay for clinical patients is analysed. This duration had, in fact, already been decreasing before the experiment. Nevertheless, can a separate effect from the change in the payment system be found? The subject of Chapter 7 is the length of the waiting period for patients who have to be admitted to the clinic for an intervention. This was a matter of some concern before the start of the experiment. For a number of specialities, waiting times and waiting lists were seen as problematic. At the moment it is an important policy goal to decrease waiting times in the Netherlands. In Chapter 8, possible influences of the experiment upon the production of the outpatient department are analysed. Estimation results are given for the probability that new patients at the outpatient department have to come back to the hospital for repeat visits.
Figure 1.1, Content of the empirical chapters

- **Primary care** (GP, midwife, ...)
- **Secondary care**
  - Specialist: first visit
    - Repeat-rate: Chapter 8
  - Admission rate: Chapter 5
  - Day-treatment(s)
  - Clinical admission(s)
  - Length of stay: Chapter 6

- **Tertiary care** (nursing home, academic hospital, ...)

Chapter 1
In Chapter 9, the conclusions are given with regard to the effect of the change in the payment system upon the treatment of patients. In addition, a summary is given.

It follows from the econometric results that tariff changes do indeed have an effect upon the treatment of patients. The tariff changes in the experiment improved the economical use of care. The highest elasticity of a single tariff found (i.e. the elasticity of the admission rate with respect to the tariff for a first visit) is about -0.4. The average tariff change because of the experiment caused a decrease in the admission rate for an average new patient of 25%, or four percentage points. Other changes connected with the experiment also influenced the treatment of patients, in both favourable and unfavourable ways. On the whole, the experiment probably improved the economical use of care concerning the admission rate and repeat visits. For waiting times, the results were mixed. On balance, the experiment probably mitigated an underlying increase in waiting times in three hospitals (with variable specialists' budgets or favourable changes in culture) and intensified it in two hospitals (with fixed specialists' budgets).