Abstract

Health care systems across the West have been subject to profound changes in medical governance over the last few decades. Once stably dominated by the medical profession, medical systems are now experiencing an influx of new organizations and accompanying regulatory approaches; inspired by corporate and managerial ideologies. Professional partnership, collegiality, discretion, and trust have been being accompanied by managerialism, bureaucracy, standardization, assessment and performance review. Most accounts of this transformation of medical governance explicitly or implicitly rely on the classic socio-political conflict model that sets the medical profession on one side and ‘external’ actors (managers, the state) on the other. In this paper, we argue that transitions in medical governance are not only the result of power struggles between the medical profession and external stakeholders, but are also due to the increasing entanglement of the interests of the actors involved.

Drawing on ethnographic research into medical training reform, we have studied changes of medical residency training ‘in action’. We examined how policies and policy ideas have been developed and negotiated at the Ministry of Health, within medical associations, during national conferences pertaining to the reform, and within the hospital, how these reforms ‘travelled’ between these sites, and how they have been ‘fleshed out’ in everyday medical training practice. We show that changes in medical governance are mediated by the enactment of (governing) instruments, the introduction of new knowledge structures as well as by practices of power in hospital organizations and the state apparatus. The dynamic processes and constellations of authority that emerge from this have led to the institutionalization of new governance arrangements of co-regulation in medical training governance.
Introduction
Many observers of health care systems across the West have noted the profound changes in medical governance that have occurred over the last few decades. Once highly stable and dominated by the medical profession, the sector is now experiencing an influx of new organizations and new approaches to regulation inspired by corporate and managerial ideologies previously marginalized in the doctor-dominated system (Mendel and Scott 2010, Gray and Harrison 2004, Chamberlain 2009). This has led to the emergence of more complex coalitions of interests and diffused sources of power (Kuhlmann and Saks 2008, Ackroyd et al. 2007). Accounts of change point at a shift from notions of professional partnership, collegiality, discretion, and trust to increasing levels of managerialism, bureaucracy, standardization, assessment and performance review (Evetts 2011, Noordegraaf 2011a, McDonald et al. 2009).

Many of these accounts explicitly or implicitly rely on the classic sociological conflict model that sets the medical profession on one side and ‘external’ actors (managers, the state) on the other. Or, to frame it in a more sociological way, such accounts reflect a dualism of (a return to) professionalism versus ‘beyond professionalism’ (see Noordegraaf 2011b). To overcome this dualism we need to explore the changes that affect professional work as well as the mechanisms that underly these changes (Noordegraaf 2011b: 1357). In this paper we explore a dynamic and relational approach of medical governance change by studying the reform of postgraduate medical education in The Netherlands.

Medical training is critical in any study of medical governance change. It is a core institution of medical professional (self-)regulation. New members to the profession are recruited and socialized in training, and it is where the profession’s core knowledge and practices are defined and transferred (see Light 1988, Timmermans and Chawla 2009).

Here we draw on our ethnographic research into medical training reform, studying the changes of medical residency training ‘in action’. During our study we traveled around multiple sites enacting reform: the Ministry of Health, medical associations, national conferences pertaining to the reform, and the hospital. We examined how policies and policy ideas are developed and negotiated, how they ‘travel’ between sites and how they are “fleshed out” in everyday training practice. The questions that guide our research are: How is the reform of medical training enacted at different sites? How is the interplay between reform activities leading to new governance arrangements?

Drawing on sociological studies of professional governance and institutional change theories we argue that transitions in medical governance are not only the result of power struggles between the medical profession and external stakeholders, but are also due to the increasing entanglement of the interests of the actors involved. Processes of change are mediated by the enactment of (governing) instruments and the introduction of new knowledge structures as well as by practices of power in hospital organizations and the state apparatus. The dynamic processes and constellations of authority that emerge from this have led to the institutionalization of new governance arrangements of co-regulation in medical training governance.
The increasing diffuseness of medical governance

From professional dominance to soft autonomy

Medical governance can be defined as “the authoritative attempts by public or private bodies to control the actions and behaviours of physicians” (Burau et al. 2009). Medical governance has often been explained in terms of the non-medical actors’ considerable lack of power to control physicians adequately. Professional groups typically claim some notion of autonomy because their work is grounded on expert and exclusive knowledge. This includes not only codified, abstract knowledge associated with formal training, but also esoteric, indeterminate and experiential knowledge that is tacit in nature, situated and embodied in practice (Freidson 1994, Abbott 1988). Eliot Freidson, a main proponent of the theory of professional dominance, claims that the medical profession has always been very effective in protecting the medical domain against outside interference. Once it has obtained protections from the state and safeguards from economic competition through formal institutional mechanisms such as educational and licensing requirements, the profession regulates itself through peer review and ethical codes (Freidson 1986, 1994). Although in his later work Freidson recognized the rise of other stakeholders (particularly the state and the market) and argued that shift in power could even crush the professional domain (Freidson 2001), he still conceived the medical profession as separate from other actors. This vision of the medical profession as a distinct and competing actor is also shared by other theorists of the medical profession. Donald Light, for instance, introduced the model of countervailing powers to indicate how several parties (the state, profession, clients and third-party payers that together constitute the health care environment) have different interests, cultures and goals that are in conflict with each other, and how the balance between these actors changes over time. According to Light, when one player in the health care field dominates, other players will react to redress the “excessive” power base of the dominator (Light 1995, 2009).

Since the 1990s, the debate has shifted toward the issue of “deprofessionalization” or “commodification” of the medical profession (Duyvendak et al. 2006, Evetts 2006). An important and growing body of literature points at the transformation of the medical domain from a profession-controlled system to a more hybrid managerial system (Noordegraaf 2007). This literature argues that organizational objectives increasingly come to regulate and replace occupational control in practitioner-client interactions, thereby limiting the exercise of discretion and preventing the service ethic that has been central in professional work (Evetts 2011, Kuhlmann and Saks 2008). Accountability measures, it is argued, have increasingly rationalized and bureaucratized professional work through procedural guidelines in the form of rule-based practices (Courpasson 2000, Ackroyd and Muzio 2007). Other scholars have pointed out how the managerial discourse has become more internalized in medical practice and culture, leading to new forms of self-surveillance (Waring 2007, Currie and Waring 2009). Levay and Waks, for example, introduced the notion of “soft autonomy” to describe how professionals internalize ideas of quality control that originate from outside the health care professions and embark on a process that has become irreversible (Levay and Waks 2009). Yet, these authors also point out that transformations of soft autonomy or “governmntality” (Waring 2007) can be conceived as strategic actions to maintain a significant degree of control over important evaluation criteria and procedures and retain basic professional autonomy (Levay and Waks 2009; 523, for similar argument see Currie and Waring 2009).
Latter scholars suggest replacing the common view with a subtler analysis of how professionals are transformed from “inside out”. However, they still rely on the classic power divide between the medical profession and outside regulators. Such an approach, we argue, largely leaves unaddressed the more contingent and gradual reform processes that not only result from outside managerial activities but also emerge from (and interact with) changes in the profession. To arrive at a preciser understanding of medical governance change, we turn to cultural-cognitive theories on institutional change.

An institutionalist understanding of medical governance change

Typically, institutional analysis emphasizes the legacies of institutional arrangements and the constraining or structuring character of these arrangements to institutional reform. Many different definitions emphasize different aspects of institutions. Here we adopt Richard Scott’s definition: institutions are “regulative, normative and cultural-cognitive elements that, together with associated activities and resources, provide stability and meaning to social life” (2008: 48). Following Scott’s definition, institutions set rules, monitor and sanction activities, both formally and informally. Institutions introduce prescriptive, evaluative and obligatory dimensions to social life and, as such, foreground ‘appropriate’ behavior (Scott 2008). Institutions establish an order that defines and justifies the roles of certain actors, helps actors in the field to interpret events, and provides routines and rationales defining appropriate ways of carrying on the work (Mendel and Scott 2010). Traditionally, institutional theories emphasize the patterning and constraining effects of institutions thereby stressing the importance of ‘structure’. More recent institutional theorists, however, emphasize the crucial dimension of agency. Discussion has thus moved away from the deterministic focus on the influence of top-down forces alone to the dialectic relationship between structure and agency (Powell and DiMaggio 1991, Finn et al. 2010, Mahoney and Thelen 2010). Streeck and Thelen (2005), for example, point at the interplay between exogenous forces and endogenous institutional changes, which may lead to gradual institutional transformation. New institutional arrangements, they argue, bring in new ambiguities as these are often subject to varying interpretations. Such ambiguities leave a great deal of play in the interpreted meaning of particular rules and in the ways the rules are instantiated in practice, providing critical openings for other stakeholders to exploit the opportunity to bring in new procedures, ideologies or knowledge structures (Mahoney and Thelen 2010).

Drawing on knowledge studies, Knorr Certina (1999) points at the importance of epistemic cultures for institutional change. Epistemic cultures are groups that create and warrant knowledge. Knorr Certina points out that the expansion of expert systems in modern society has resulted in a massive increase in the technological and informational products, and amplifies the processes themselves as well as knowledge-related contexts and structures. “A knowledge society is not simply a society of more experts, more technical gadgets, more specialist interpretations. It is a society permeated with knowledge cultures, the whole set of structures and mechanisms that serve knowledge and unfolds with its articulation” (Knorr Certina 1999: 8-9). According to Knorr Certina, knowledge structures implode in social structures and existing institutional arrangements and thereby transform these institutional arrangements. How institutional arrangements are rearranged, however, is contingent and depends on many other influencing circumstances. Knorr Certina stresses the crucial importance of epistemic objects to the analysis of change. Epistemic
objects are objects of knowledge; the objects practitioners employ in their daily practices, be they problems to solve, models they create, or information systems they utilize. Change, Knorr Certina points out, can occur through processes of ‘object-centered management’ as epistemic objects create some sort of distributed cognition, which then starts to function as ‘a management system’. Through its discourse, existing practices become coordinated and rearranged (Knorr Certina 1999). Knorr Certina claims that detailed empirical research is needed to grasp the influence of epistemic cultures and accompanied epistemic objects.

What does all this imply for our analysis? First, if we want to understand changes in medical governance, we must be sensitive to seemingly small or gradual adaptations in governance arrangements that may set into motion more profound changes over time. Second, we should look not only at personal (“human”) interactions but also take into account the role of epistemic objects in the process of medical governance change. Third, we must study multiple sites (both their connections and interactions) to gain in-depth insight into the process of change.

A multiple-sited ethnographic study

Before describing our research, we need to consider the term ‘multiple-sited’. Choosing a term to describe a research design has theoretical connotations as well as practical considerations. A multi-level approach, for instance, encompasses hierarchy. The term fits in with the macro-meso-micro distinction so often used in policy literature or sociological accounts of professional governance (for example, Harrison and McDonald 2008). According to this approach, policy measures are developed at the broad political level and ‘travel down’ to play out with varying impact on lower-intermediate field-level structures (for example, professional associations) or local communities. And, the other way around, ‘policy feedback’ travels up from local levels to the political level. Other terms fitting in with this approach are “top down” and “bottom up” policies. Yet, we want to point out in this study that the distinctions between these levels blur when one studies “real practices” (also argued elsewhere, see e.g., Bijker et al. 2009: 24, Strathern 2000).

A multiple-sited approach indicates equality (one site is no more important or powerful than any other) as well as multiplicity. The term ‘site’ stems from the ontological approach, which is often used in science studies (Mol 2002, Clarke 2005). An ontological study suggests that ‘reality’ is not a single or unique object that can be discovered, but is something constructed in the situated interplay between actors and objects. To comprehend “real” practices, then, one needs to study practices (Timmermans 2006). Moreover, by traveling between practices (or “sites”), the researcher gains insight into the connections between multiple sites. Multiple, then, refers to the relatedness of the different sites. We do not use the term “multi”, as this would indicate plurality (which would mean something like “medical training reform is everywhere”, making it rather impossible to study) (see Mol 2002, Law and Mol 2002).

Instead, by following, traveling and “acting” with the actors involved in the reform, we attempted to gain in-depth understanding of the reform of medical training—and with that an understanding of the process of medical governance change. This does not mean that we went everywhere, or only to the important places (from an ontological approach it is awkward to define what is important and what is not). We observed and interviewed the key actors, conducted a document study and talked to many people (doctors, residents, civil servants, hospital administrators, policy advisers, researchers, educationalists, and nurses), to acquire a deep
understanding of the discussions, instruments, measures, objects, strategies and ongoing events in medical training governance.

The study
Our study is based on three related research projects conducted in The Netherlands. First (2006–2010), we were the appointed evaluators of a national project working on the implementation of revised training programs in pediatrics and gynecology training (the ‘InVIVO project’—more on this below). We conducted a process evaluation and observed meetings of the InVIVO project team (35), national seminars and workshops on the reform (16) and meetings in local hospitals (8). We conducted participatory observations at the medical specialist association pertaining to the reform (10). In addition, we conducted in-depth interviews with physicians, medical residents, policy makers, educationalists, nurses and hospital administrators (55 in total) (see de Bont et al 2010, Wallenburg et al. 2012).

Second (2009-2010), the first and fifth authors of this chapter were part of a group of policy advisers and scholars writing an advisory report on medical education, commissioned by the Ministry of Health. During the writing process we were in close contact with policy makers at the ministry and experts in the field of medical training (RVZ 2010). We observed meetings with field parties (medical associations, health insurers, associations of hospitals) and policy makers (10 in total). Third (2010–2012), we conducted a study in surgical training, concentrating on the consequences of implementing new training programs in surgery for the practice and daily organization of residency training (‘the actual work’). We observed local clinical teachers at meetings (7) discussing topical issues related to changes in surgery training. We interviewed attending surgeons (13) and surgical residents (14) about current training reforms in everyday residency training. We also interviewed hospital administrators (10) about the reforms in medical residency training.¹ We made 135+ hours of observation.

Background: The reform of medical training
In The Netherlands, medical training reform in the 2000s was the result of political pressure and ongoing debates in several medical societies (the scientific associations of the various specialty areas) on the need to bring medical training in line with broader changes in health care. It was felt that existing residency training programs no longer fitted in with the heavier patient load (nowadays fewer patients are admitted to hospital and they stay for shorter periods), medical technology developments and a severe reduction of resident duty hours. Whereas medical residents used to work up to 100 hours a week, nowadays working weeks are limited to 48 hours on average, due to government legislation (see Richards 2009). The reduction of duty hours affected the traditional master-apprentice system in which residents learned medical conduct by working closely together and imitating attending physicians over long periods (Bosk 1979, Szymczak et al. 2011).

At the time, the Ministry of Health considered medical education a useful policy instrument to deal with upcoming changes in health care, such as rising costs and the need for more interdisciplinary care in the light of an increasing elderly population. In 1999 the then Minister of Health, Els Borst-Eilers, gave a speech addressed to the Royal Dutch Medical Association. The

¹ The interviews were conducted together with Niels Hopmans (surgery intern/researcher, Erasmus Medical Center Rotterdam) and Ted den Hoed (surgeon/clinical teacher, Ikazia Hospital Rotterdam).
minister, a physician before entering politics, stressed the need for more efficient training and a shorter training trajectory. Reforms of the medical curricula were needed to accomplish this, she argued.

The discussions were followed by two policy documents, one by the medical association, the other by a government-appointed commission. The first was *De Arts van Straks* (*Tomorrow’s Doctors*) (commissie Meyboom 2002). In short, the report depicted a prospect for the medical education system of shorter follow-up periods between training phases and a curriculum based on modern educational insights into improving the quality of workplace-based learning. *Tomorrow’s Doctors* was followed in 2003 by *De Zorg van Morgen* (*Tomorrow’s Care*) (Commissie Legrand 2003), which supported the recommendations made in *Tomorrow’s Doctors* but placed more emphasis on improving the efficiency of medical training. It argued that the occupational and educational structure of the health care system should be redefined to be better equipped for upcoming health care needs.

The *Centraal College Medisch Specialismen* (*Central College of Medical Specialisms, CCMS*), an independent regulatory body mandated by law to monitor and control residency training, feeling an increasing sense of urgency to adapt its training programs to changing demands, launched a sweeping reform project for medical residency training programs in 2004. Drawing on much broader trends of evidence-based learning and competency-based practice, the CCMS announced that all training programs must be redesigned following a competency-based model that specified clear goals (Jones et al. 2001, Frenk et al. 2010). To that end, they adopted the Canadian CanMEDS model, listing the seven competencies (or “roles”) a modern doctor should master (see Frank 2005). Besides technical competence, the model contained general competencies (for example, communication, collaboration, organization) indicating the more general role doctors should play in health care delivery. In addition, the competence of residents had to be evaluated regularly using special clinical assessment tools. Standardized assessment, they argued, would help to objectify capabilities and make them transferable. Moreover, this system would better serve the broader aim of enhanced transparency and accountability in medical work (Taylor 2011).

**Designing a modern medical training program**

How was the reform of medical training enacted in practice? As noted above, the need to reform residency training was also felt by physicians involved in everyday medical training:

*I realized that quality of care is strongly related to training quality. Medical residents are the first to encounter patients. They serve in the emergency room, and support deliveries. To improve the quality of hospital care we need to train them differently. (...) You need to know when they’re ready to deliver certain types of care.*

(Pediatrician, P1)

This pediatrician, who was one of the initiators of the reforms in pediatric training, argues that medical residents are insufficiently prepared to deliver patient care for two main reasons. First, residents do not have enough skills and experience to care for patients in relatively unstable clinical situations. And second, it is unclear when they are ready to deal with critical patients as
their capabilities are not tested. A better training system, the pediatrician indicates, would improve the quality of health care delivery. Supported by other prominent figures in the field, the pediatrician took the lead in redesigning the pediatric training program. They were joined by a group of gynecologists from neighboring hospitals who also felt that medical training lagged behind major shifts in health care and that it was necessary to meet residents’ expectations of medical training:

_They have been educated in a school system of competency-based learning and feedback. And they expect something similar from us. Besides, more residents want to be trained part time, especially now with the feminization of medical work. We need another training system._

(Gynecologist, G1)

As this gynecologist points out, residency training needs to be “modernized”; the classic master-apprentice model lags behind contemporary ideas on good education (structured, competency-based programs, structured feedback on performance) and adult learning. A new system is even more warranted, the gynecologist argues, now that residents spend far less time in the hospital.

The group of pediatricians and gynecologists collaborated in designing a reform project. From the very start, attention was focused on using modern educational insights and instruments to reform residency training programs. It was strongly believed that educational principles would improve residency training as they shape the former relatively unstructured program and allow clinical teachers to provide structured feedback to enhance the residents’ learning process. Educationalists, who until then had been hardly involved in residency training, were hired to study and develop clinical tools and bring medical curricula in line with modern education insights.

One such educational instrument was the mini-Clinical Evaluation Exercise (Mini-CEX). The Mini-CEX is a method of assessing competencies in real-life clinical practice. It consists of a short observation of a resident demonstrating clinical skills, and is carried out by a clinical supervisor using a pre-defined scoring format listing the competencies and performance levels a residents should master when performing a certain clinical procedure (e.g., a physical examination of a patient) (Norcini et al. 2003). Educational instruments, such as the Mini-CEX, would encourage physicians to direct attention to the educational principles of residency training:

_The assessment tools help physicians to provide feedback to their residents. We focus on the instruments as these are the simple things, and then we move up._

(Pediatrician and former leader of a clinical medical association, P5)

This physician refers to the change of culture deemed necessary for a new training system directed at learning instead of “doing”. Educational instruments, especially assessment tools, were believed to be excellent devices to support this transition as they would draw attention to a resident’s learning process. Moreover, the instruments fitted in with the way doctors practice medicine:
The instruments perfectly suit the way we doctors work. We first diagnose a clinical problem and then come up with solutions to solve the particular problem. This is exactly what the instruments do.

(Gynecologist, G3)

The use of instruments to measure and steer performance fitted in with the broader trend of evidence-based medicine (Timmermans and Berg 2003, Taylor 2011). Many physicians felt that if instruments were used to test residents’ competence, meaning that assessment would have consequences for individual learning trajectories and—eventually—medical careers, then the instruments would have to be based on sound research. At the same time, and this is important to note, it was strongly believed that educational instruments would improve medical training without encroaching on traditional training practices. It was often said, “We’re only making explicit what we used to do implicitly” and “The reform will only change ten percent of our work, the other ninety percent will stay the same.”

Negotiating a reform project

In 2005 the gynecology medical society, approved the redesigned gynecology training program and a year later this was followed by a redesigned pediatric training program (NVOG 2005, NVK 2006). Both programs spelled out the themes and clinical procedures residents should learn, as well as the level of competence they should obtain at each per learning stage. For example, the gynecology training program said that ‘a resident should be able to consult on a complicated pregnancy without supervision in year two’ (NVOG 2005: 42). Training programs followed the structure of the CanMEDS framework mentioned above, including clinical tools to assess residents’ competencies. The programs introduced new educational methods, such as personal training plans and creating a portfolio to collect evidence of (and to account for) personal capabilities.

With the introduction of their new training programs, gynecology and pediatrics shot ahead of other medical specialties that were only getting started with redesigning their training programs. They were also ahead of the CCMS, still drafting their regulations. Nevertheless the boards of both medical societies decided to submit their new training programs for CCMS approval and pursue implementation anyway. The societies installed the “InVIVO” project group to implement the reforms and applied to the Ministry of Health to obtain funding for the implementation process. The CCMS accepted the two redesigned training programs: “They couldn’t reject our work as we went further in structuring the programs than their concept regulations” (Gynecologist, G3). However, the CCMS opposed the funding proposal, arguing that funding should benefit all medical specialties and not just a select group. The CCMS wrote a letter the ministry to forestall its policy makers from funding the project. However, and much to the surprise of the appliers themselves, the Ministry of Health decided to subsidize implementation to the tune of five million euros. During an interview a Ministry of Health policy maker explained the ministry’s strategic reasons for funding InVIVO:

[Former Minister of Health] Klink’s idea was to support entrepreneurs in the medical community, just to get something done there. The medical association seeks only to protect private interests.

(Ministry of Health policy maker).
Although the government considered medical education an important policy objective, to reshape the broader educational structure of the health care system and, with that, improve health care delivery, funding InVIVO was also part of a broader strategy to open up the closed system of medical professional self-regulation.

This does not mean, however, that the medical association was entirely put aside. The medical association also received government funding for more general reforms to the medical training system, although the amount of money was substantially lower. Yet, on other issues of that time (for example, a severe, lingering conflict about doctors’ salaries) the medical association remained the ministry’s main discussion partner. In other words, the ministry did not abandon existing governance arrangements but used its resources to stir up vested governing coalitions by commissioning gynecology and pediatrics to act as vanguard specialties and provide valuable practical experience (i.e. ‘best practices’) to guide the reform process of the other medical specialties.

In short, the InVIVO project introduced new alliances between the Ministry of Health, physicians (specifically gynecologists and pediatricians) and educationalists. The ministry was willing to become involved as it believed that the project would help open up what was perceived as a closed domain (that still had high public stakes). The physicians, in turn, were aware that they had engaged with an often distrusted actor (the government) but also thought they could limit the government’s influence. Moreover, the physicians believed that government involvement (and associated funding) would allow them to overcome resistance in medical practitioners against reforms in residency training.

The collaboration between the diverse parties thus introduced a complex coalition of interests in medical training with new cognitive structures and ideological purposes. Although the influence of policy makers and educationalists was initially marginal, the new policy objectives and knowledge structures introduced new ambiguities and notions of “good residency training” to the medical training system. As we will show below, both the government and educationalists (particularly the didactic methods and tools) gradually began playing a more substantial role in medical residency training.

**The coordinating role of educational tools**

The members of the InVIVO team (“project team”), particularly its physicians, struggled in their task to guide the implementation process of the new residency training programs. They felt hampered by both the obligation to account for the implementation of the redesigned curricula to the ministry and the need to respect the professional values of collegiality and trust, which implied that they were unable to force colleague physicians to change their training habits (see also Bosk 1979, Witman et al. 2011). The project team feared that if they pushed their efforts to reform residency training too far, they would lose the physicians’ support and the whole reform project would collapse. Indeed, the reform was heavily criticized by many rank-and-file physicians who accused InVIVO members of rendering medical training too rigid and even “unworkable”.

The balancing act became even more difficult when InVIVO was put under the protection of the newly established *College Beroepen en Opleidingen in de Gezondheidszorg (College of Health Care Professions and Education, CBOG)* in 2007. The CBOG was commissioned by the Ministry of
Health in order to pursue the ministry’s goal of establishing an integrated system of health care professions and education. It was installed as an independent regulatory body, governed by several parties involved in health care education (the medical association, nursing association, association of mental health care and the associations of hospital institutes). The CBOG operated as a ‘single point of contact’ with the ministry on professional and training matters and so InVIVO became one of its core projects. It is important to note that although the associations formally supported the establishment of the CBOG (the medical profession was even one of the founders), in practice they sought to restrict its influence as much as possible. We will elaborate on this below. The educational instruments played an important role in the balancing act of the InVIVO doctors.

The instruments were enacted as boundary objects to bring together the worlds of medicine, policy and education. According to Star and Griesemer, boundary objects are “plastic enough to adapt to local needs and the constraints of the several parties employing them, yet robust enough to maintain a common identity across sites” (Star and Griesemer 1989: 393). As boundary objects, the educational tools created a common language and common objective for a modern medical education but at the same time had different meanings and embodied different purposes for educationalists, policy makers and medical doctors. The world of education saw the instruments as important tools to improve residency training by incorporating modern educational insights (including competency-based training, steering the individual learning process by following the rules for providing good feedback, and reflexive learning methods). Believing these instruments would quickly reform and improve professional training without encroaching on traditional training methods, the medical world embraced the educational tools as useful dependable instruments as they relied on sound scientific research. The policy world regarded them as useful tools that would lead to a more transparent training practice.

Acting as boundary objects, the instruments mediated the relationships between the worlds in two important ways. First, reliance on educational instruments rendered medical training increasingly visible and, as such, opened up the medical training system to external scrutiny. It allowed the state to transcend previous narrowly-defined professional boundaries in medical training governance (for similar observation see Hasselbladh and Bejent 2007—this topic will be discussed more thoroughly below). Second, the emphasis on using educational tools in everyday residency training gradually led to shifting notions of ‘good’ residency training. Whereas it used to be about medical expertise, now the emphasis shifted to principles of adult learning and evidence-based medical training. A growing group of clinicians embraced the new training methods in a relatively short time.

A striking example was the introduction and implementation of D-RECT (Dutch Residency Educational Climate Test), an instrument to measure and evaluate the quality of the clinical learning environment. D-RECT includes aspects as quality of supervision and teamwork (Boor et al. 2011). Initially clinical teachers and medical residents initially were highly reluctant to use the new instrument. The medical residents feared they would suffer negative consequences if they expressed any criticism, and the physicians feared damage to their reputation as clinical teachers. Despite this initial resistance, many groups of physicians incorporated the instrument. One surgeon explained, “It’s just a part of these days, and it’s here to stay. Other hospitals are using it, we need to do it as well” (Surgeon, S3).
The surgeon’s quote illustrates that conforming to the goals of modernization began to seem a more appropriate and rational attitude to take than nonconformity (see also Dixon-Woods et al. 2011). Teaching physicians also incorporated new training structures in daily clinical practice. A surgeon explains:

*I made a schedule listing which attending must assess which residents each week. Now I’m sure these assessments happen. That’s important, I think. I also rescheduled the surgical program to make sure that all residents can do enough operations at their own level of competence.* (Surgeon, S5)

Drawing on Knorr Certina (1999), we can see how the educational instruments gradually have become managing epistemic objects as they brought about new forms of knowledge, expertise and evaluation in residency training. The incorporation of new training methods and tools reconfigured existing work practices. The surgeon above points out that the surgical program was rescheduled in order to enact a resident-oriented training program. Put it differently, redesigned surgical programs and the incorporation of clinical assessment tools have restructured traditional clinical training practice and have reconfigured ‘old school’ methods in which residents fully depended on an attending’s willingness to provide learning space or feedback. Instead of educational methods complementing the traditional method of learning through expertise, educational tools and, more broadly, educational structures have become prominent in rethinking daily residency training.

**Shifting interests and the defense of professional jurisdiction**

The growing reliance on educational mechanisms rendered medical training practice visible and, in consequence, increasingly opened up the medical training system to outside regulation. An important turnaround in that respect was the introduction of the Education Fund in 2007 as part of the broader shift towards regulated competition in the Dutch health care system (see Helderman et al. 2005, Wallenburg et al. 2012). Up until then, medical training was largely paid for through health insurance premiums. Teaching hospitals received more money (were more expensive) than hospitals without training programs. However, the difference in costs impeded the aim of competition between hospitals. As medical training was considered a common good, the Ministry of Health decided to establish a tax-based fund (“the Education Fund”) to subsidize residency training. The fund was administered by the Ministry of Health.

Initially, the medical profession agreed, considering the fund a purely administrative tool to protect residency training from the possible harmful consequences of competition. Yet, the Education Fund soon appeared to accompany a new form of ambiguity in the governance of medical training as it not only gave insight into the profession’s policies on the distribution of training posts, but also provided the means to interfere in this process. In 2008 the government announced that the allocation of training posts would partly depend on measured teaching quality. Better training quality would be rewarded with more training posts. Interestingly, the government plan pointed to a new form of rationalized agency in medical training governance, as well as decreasing acceptance of professional control over medical training.

The Ministry of Health subsequently commissioned a group of educationalists and civil servants to develop a set of quality indicators for medical training. A few months later the working
group presented an extensive framework of educational principles, quality instruments and competence levels, as well as a toolbox of clinical assessment tools to measure residents’ skills. They argued that training quality could not be measured based on a few rough indicators but needed a tailor-made approach comprising all aspects of residency training. However, the framework was received with much skepticism from both the medical profession and the Ministry of Health. Physicians argued that the framework went far beyond what residency training is and should be about. Policy makers, in turn, stated that the framework was too complicated to decide upon training quality. They demanded a more simplified set of indicators. Subsequently, the ministry commissioned the CBOG to use an existing measurement instrument as a proxy to measure local training quality. This instrument became D-RECT (as mentioned above). However, clinicians collectively refused to cooperate. Although many of them already used D-RECT in their hospitals, they said it was a learning device to improve local training practice and should not be used as an accountability instrument.

The clinicians’ resistance to applying D-RECT to account for training quality also revealed that the medical profession did not accept the CBOG’s authority over medical training. Instead, the medical profession aimed to defend its jurisdictions and sought to control which matters they allowed the CBOG to be involved in. The quality of medical residency training and how physicians should account for it were regarded a professional matter that only medical doctors should deal with.

Supported by the medical association, a few physicians (including the InVIVO doctors) collaborated in an attempt to counter the ministry’s plans. Drawing on the government’s desire to compete on quality, they came up with a plan which allowed residents to choose an internship at the end of their residency. According to the plan, local teaching groups would compete for the senior residents (attractive workers because of their ability to act autonomously) based on (1) offered learning opportunities (e.g., an internship in a clinical sub-specialization) and (2) training quality (as determined by the introduced performance indicators). The plan was presented in a closed meeting at the Ministry of Health, attended by two physicians involved in the ‘counter plan’, the director and vice-director of the CBOG and two educationalists from the group that had developed the quality indicators. The physicians gave a sparkling presentation on the need to reshape current policy developments and relink them to the reality of everyday clinical work: “We tend to lose contact with the doctors. Clinical work should be at the forefront—in the end it is all about contents” (Physician, representative of a medical association). The CBOG said they supported the plan and suggested that it should be executed under its protection. The physicians, however, publicly resisted the CBOG’s involvement and argued that the project should be a doctor’s initiative to win the support of rank-and-file physicians. The plan was finally approved and—like InVIVO a few years before—it was generously funded by the Ministry of Health.

Noticeably, although the medical profession had resisted the idea of measuring quality to meet the purpose of competition between training sites (and thus between colleague physicians) they incorporated the quality indicators in their plans nonetheless. An important motivation for using quality indicators was the fact that a great deal of public resources was involved (a single training placement costs approximately 150,000 euro a year). The physicians felt strongly they had to compromise so as not to lose funding. Yet, and this is crucial, the incorporation of the quality indicators also demonstrated the increasing acceptance of quality evaluation in medical work.
The increasing diffuseness of interests in medical training

How did the hospitals enact the reform of medical training? The arrival of the Education Fund and a more broadly competitive hospital market were accompanied by a renewed interest in medical training among hospital administrators. Traditionally, residency training was conceived of as “a doctor’s thing”. The Education Fund, however, offered a new source of income to teaching hospitals (money from the Education Fund was paid to the hospitals boards instead of directly to the clinical teachers, which led to fierce negotiations between hospital administrators and clinical teachers about the allocation of the money). Moreover, at the time many hospitals wanted to obtain the predicate “teaching hospital” to enhance their position and reputation on an increasingly competitive market (also Power et al. 2009). The predicate comprised a formal license with associated requirements for equipment (e.g., skills lab, library, study facilities) and a quality monitoring system (Rombouts 2012). Increasingly “teaching hospital” stood for a modern, high-tech and highly qualified hospital. Such a reputation was believed to be important not only in negotiations with third-party payers (particularly health insurers) but also in attracting highly qualified physicians. To position their hospital as a sophisticated teaching institute many hospital boards have invested in modern teaching facilities in recent years. As part of this, educationalists were hired to improve training programs, for instance by developing courses and setting up quality monitoring systems. As a result, health care education, and medical training in particular, increasingly have become “system properties” (Waring 2007).

Physicians have also contributed to this institutional transition process. In the past few years, they have become more interested in the hospital's reputation for both economic and professional-technical reasons. First, a good reputation means more investment by health insurers and thus more opportunities to conduct highly complex medical procedures. Second, in the light of increasing competition for training posts, the better the hospital's reputation, the better it can attract good residents. This interest has made physicians increasingly dependent on the hospital's broader policies. Besides this, the new CCMS rules on training quality and assessment of competence have encouraged the clinical teachers’ reliance on hospital boards to accomplish these requirements.

The entwinement of different purposes and requirements have had important consequences for both the content and the authority over local residency training practice:

*I used to contact the hospital administrator directly to discuss issues related to our residency program, but now they forward me to the manager of the teaching clinic. He’s an educationalist and interested most of all in the education programs of the entire hospital*.

(Surgeon, S3).

Besides, with the investment in developing training facilities, clinicians are more often forced to purchase local [in-house] courses, even if they doubt their suitability:
The surgeon quoted above is reporting on a course developed by local educationalists. He points out that the quality of the course is insufficient but that surgical residents must attend it anyway as it was been created (and paid for) by the hospital. The quote nicely reflects the ambiguity of current shifts in medical training governance. To improve teaching facilities, attract good residents and obey new formal requirements, teaching physicians have increasingly become dependent on other, formerly marginalized stakeholders in medical education. Yet, this dependency also restricts the medical profession’s abilities to manage and control the training of their residents.

In sum, physicians’ interests and the interest of hospital administrators have become more entwined, leading to a more diffused constellation of authority over medical training. This diffuseness makes it hard for the medical profession to regain control over residency training, which would have suited the sociological conflict model explained above. Instead, the case of medical training reform reveals that physicians do not intend to regain control as the conflict would go against the (changing) private interest of clinicians to improve a hospital’s teaching reputation and to obey new, professional requirement for residency training.

Conclusions and discussion
In this chapter we have taken the critical case of medical residency training reform to examine contemporary shifts in medical governance. Reform was driven by two parallel developments. First was government’s aim to create a new educational structure to tackle upcoming problems in health care (e.g., rising health care costs, rising numbers of chronically ill patients). Second was the wish of medical doctors to adapt medical residency training to shifts in clinical work (for example, technical developments, severe patient load). Both aims were brought together in the renewal of residency training programs. Although medical doctors initially believed that the reform would “only make explicit what we always have done implicitly”, the chapter has revealed how the reform gradually turned into a process of institutional change.

Three broad, related processes underpinned the changes in medical training governance. First, a group of medical entrepreneurs (“InVIVO’s physicians”) aimed to enhance the quality and timeliness of medical residency training. The physicians acted as mediators between the broader medical professions and the government. They sought to enhance medical training by implementing educational methods and principles in residency training, and entered into new coalitions with government representatives and educationalists to accomplish their aims. Second, educational principles and tools turned out to be important carriers and mediators of institutional change. As managing epistemic objects (Knorr Certina 1999), the educational instruments reconfigured traditional clinical training practice and reframed the notion of “good residency training”. Residency became more about structured training programs, competency-based models and quality evaluation. An important explanation for the transferring role of education instruments was the fact that the tools fitted in with wider trends in evidence-based medicine and steering by (measurable) performance in the health care field. Moreover, the educational instruments not only represented this trend but physicians also actively contributed to
the performance trend as the instruments were enacted and shaped by clinicians themselves. The research has shown that physicians rapidly embraced the educational tools and mechanisms, for example by redesigning operating programs to render a resident-oriented working process possible. Also, performance measurement was extended from residents’ skills and knowledge to the quality of the learning environment and teaching capabilities of individual physicians. Thus, performance measurement and steering by performance were also consequences of medical professional activities (see also Niezen et al. 2012).

The third underlying process was the shifting interests of other stakeholders in medical training. Following substantial changes in the policy context (particularly the introduction of competition into the health care system), formerly marginalized stakeholders in postgraduate medical education developed a renewed interest in residency training. This chapter has demonstrated that medical training not only offered a new income source to hospital boards, but also played an important role in establishing a good hospital reputation in the light of an increasingly competitive hospital market. The educational tools rendered residency training more visible and hence evaluable to other stakeholders. For example, the evaluation tools to measure training quality provided the government with new means to gain a grip on the allocation of training placements, which was traditionally one of the key objects in medical training governance. The research has revealed how the convergence of both “internal” and “external” reforms led to an increasingly diffused constellation of interests and authority in medical residency training. Stakeholders’ interests entwined, despite the basic differences and conflicting aims. In the hospital, for example, new coalitions of physicians, educationalists and hospital administrators arose to serve both the aim of the medical profession to contract excellent residents and the hospital’s goals of generating income and enhancing its reputation. Although physicians regarded such collaborations as an unwanted loss of control over training practice, at the same time they felt that new governing arrangements were inevitable if they were to be able to live up to new expectations and requirements. In short, the basic explaining factor for the transitions in Dutch medical training seems not to be “conflict” but rather the entanglement of interests and objectives.

The principle of entanglement provides us with an interesting theoretical concept for the understanding of medical governance change. It is important to note that entanglement does not mean convergence of interests, or that coalitions of stakeholders are rid of conflicts and power plays. As we have shown, the fact that quality indicators gained a prominent place in the medical association’s project to forestall government control over the distribution of training posts was not so much because the profession embraced the idea of competition on quality, but because they needed the government’s support to remain entitled to resources from the Education Fund. Seen this way, the internal-external distinction, which is key in the sociology of professions, appears to be far more diffuse. During the reform process of residency training it became increasingly unclear what was internal and external as interests and activities increasingly intermingled. The medical profession appeared not to be such a closed shop but comprised entrepreneurs who sought to reform clinical practices, for instance, by engaging in new alliances with outside stakeholders to encourage the reform process in the medical profession. The chapter has demonstrated that a multiple-sited ethnographic research approach allows one to make complex reform processes visible as it accurately captures the dynamic interplay between policy developments and stakeholders as well as between instruments and epistemic shifts.
multiple-sited approach enables one to elucidate on contingent developments and renders visible the seemingly small yet crucial shifts in governance arrangements that otherwise tend to remain unnoticed.

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