Implementing transparency and competition in medical specialty training

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ABSTRACT

Purpose
The feasibility of transparency and competition in medical specialty training to raise accountability and quality of training is unclear. By studying a case in specialty training, the authors aimed to explore effects of introducing transparency and competition and how these are influenced by the implementation approach.

Method
In 2013, the authors conducted a case study of a Dutch project between 2009 and 2013 that aimed to improve accountability and quality of specialty training by introducing transparency and competition for electives. Proceedings of project meetings were thematically analyzed to identify choices and developments regarding the implementation approach and to assess the effects of various approaches. A theory-driven methodology was used for the analysis, based on theory from implementation science.

Results
The authors identified effects and features of the implementation approach in the themes Transparency, Competition, and Obstacles for competition. They found effects and implementation approach to be strongly interdependent. By the end of the project, 79% of participating programs had displayed electives on an openly accessible website. Displaying electives increased feasibility of individualizing training, but did not yet lead to competition for electives. The authors saw a shift from a discourse of training command by program directors, to a discourse where trainees’ command became relevant. Stakeholder involvement revealed various obstacles to resident mobility, including social-structural obstacles (like strictness of regulations), and social-cognitive obstacles (like the value of senior trainees to do clinical work).

Conclusion
Transparency about available options in specialty training has the potential to contribute to quality. However, competition may be hampered by various obstacles, which can be revealed by stakeholder involvement. Adapting implementation approach to the obstacles supports development of fundamental changes. With these findings, this study illustrates the dynamic nature of the approach and effects in an innovation process in specialty training.
INTRODUCTION

Postgraduate medical education is well on its way towards a competency-driven and outcome-based approach. The main features of the newly implemented specialty training programs are clear learning goals and assessment, mainly based on performance in actual practice. The reform included, among others, the introduction of a well-defined training structure, faculty development and a more systematic approach to assessment of trainees.¹

Now, new aspects of specialty training come to the fore that warrant attention and require innovative solutions. A first matter of attention is that physicians need to develop specific areas of expertise to cope with the increasing complexity and specialization of patient care.² A competency-based approach to training caters to this requirement by allowing individual trainees to optimally customize training to their learning needs. As a consequence, these individualized learning paths will no longer all have the same end point or even duration. Optimal preparation for future practice could be supported by rounding off specialty training with purposefully chosen electives.

Secondly, quality of training is still hard to determine. Various new elements in training are supposed to contribute to training quality, such as workplace-based assessment tools like mini-clinical evaluation exercises.³ Also, instruments have been introduced to assess components of clinical training, for instance learning climate⁴ or teaching qualities of faculty⁵. However, determining the overall quality of a training program, i.e. the outcome of all the elements combined, remains an unresolved challenge. This means that it is not transparent how training programs measure up against each other and how programs can learn from each other to stimulate training quality and to increase accountability of investments.⁶

In the fields of healthcare and higher education, the current trend is to utilize transparency about performance to generate accountability and to improve quality.⁷⁻⁹ The concept of transparency about performance and other relevant data is well-established in traditionally competitive sectors like the airline industry. There, it
is known to stimulate quality aspects, such as customer satisfaction and productivity, and to reduce costs. Following this line of reasoning, individualization and quality of medical specialty training might be improved by introducing more transparency and competition in this field. It is worth investigating what effects would be achieved by employing such a mechanism in specialty training.

However, it is clear that bringing about an intended change in medical education by introducing innovative concepts is not straightforward, as has been demonstrated by the introduction of competency-based education. An innovation in specialty training is likely to bring about unintended effects in other domains than the intended ones, and individuals differ in which effects they perceive most clearly. There is relatively little understanding of how effects of innovations in medical education come about. As long as these processes are not understood, it is insufficient to limit assessment of innovations in specialty training to intended outcomes. Instead, assessors of innovations need to be perceptive to all effects, and to the underlying mechanisms of development of the effects. The nature of the implementation approach has been suggested to influence the development of effects.

In this study, we aimed to gain insight into the effects of transparency and competition in specialty training, and into aspects of the implementation approach that are relevant for the achievement of those effects. We studied a recent case of introducing transparency and competition for final-stage training electives in the Netherlands. The questions that guided our research were: what are the effects of implementing transparency and competition in specialty training, and how are these effects influenced by the implementation approach? We took a theory-driven approach to qualitatively analyze project-generated documents and stakeholder insights.
METHOD

Setting

Specialty training in the Netherlands

Medical specialty training in the Netherlands lasts three to six years, depending on the specialty. It is fully funded by the Ministry of Health, which also yearly decrees the number of trainees that can enroll in each specialty training program. There are national training guidelines for specialty training in general, and for each specialty separately.²⁰

For most specialties, training is offered by eight clusters consisting of one university hospital and several affiliated general teaching hospitals. Most of these hospitals employ training staff who support the program directors of all specialties. Following national requirements, all specialty training programs had to be organized as competency-based curricula in 2011 at the latest. The new curricula of most specialty training programs contain elective parts in the final one or two years, which usually focus on specialized medical content. Each training department is supposed to have an own training directive, which includes descriptions of the electives offered in that department.

Display Project

In an effort to stimulate individualization and quality of residency training, the Dutch government and several organizations of medical specialists saw a possible solution in combining these two issues by creating transparency and competition for electives. The ministry of Health provided a 1.5 million euro grant to test this concept in a 4-year project called the Display Project (2010 until 2013) (www.opleidingsetalage.nl).

The Display Project’s objective was to have program directors display information about their electives on an openly accessible national website, including all the details that they considered relevant for trainees to make an optimal choice. Also, trainees who had completed an elective should be enabled to add their review to the website’s information, in order to support other trainees in choosing the most suitable elective. This process was to provoke professional competition among
training programs as well as among trainees: program directors would be encouraged to design relevant electives and maintain high quality of training in order to attract trainees, while trainees could face competition for admission to popular electives. Eventually, trends in trainees’ choices might even provide indications of the quality differences between electives offered at different training departments.

The national organizations of nine specialties applied to participate in the project: Internal Medicine, Surgery, Obstetrics-Gynecology, Pediatrics, Neurology, Radiology, Anesthesiology, Orthopedic surgery, and Plastic, Reconstructive and Aesthetic surgery. The project management was entrusted to OMS, the organization that represents all medical specialties in the Netherlands, which employed staff consisting of a project manager, a project supervisor, and a secretary. The project was led by a project team consisting of 11 persons: the initiators (representatives of program directors and training staff), staff, trainee representatives and educationalists. Also, a comprehensive project group was formed, consisting of representatives of all parties involved with specialty training, to ensure contact with all those stakeholders.

**Design**

This study was conducted from a constructivist viewpoint. This means that we assume that knowledge is constructed by researchers in interaction with data and that it is not possible to present an absolute truth. We conducted a case study of the Display Project to clarify what happens when introducing transparency and competition in specialty training. Case studies are suitable for clarification in general and to gain understanding of innovation processes specifically. Using a theoretical model about complex innovations in the field of healthcare, we took a theory-driven approach, because this is known to support the study of complex processes. The model contains four main constructs involved in implementation processes: 1) Contribution: what agents do to implement an innovation; 2) Potential: social-cognitive resources available to agents, e.g. agents’ readiness to implement and adopt the innovation; 3) Capacity: social-structural resources available to agents, e.g. what means agents can employ to implement the innovation, including their social networks; 4) Capability: possibilities presented by the innovation, e.g. its components, whether these can be integrated into practice, and its effects.
We employed a thematic analysis of the official documents generated during the four-year project period, because this provided a way to include possible alterations in the implementation approach and track effects and developments.24,25

Researchers and analysis
The main researcher was involved with the Display Project as a critical observer, whose role it was to provide the project team with feedback. In this function, she spoke with various stakeholders and attended meetings throughout the project. Two of the other research team members (PJD and FS) were active members of the project team.

We used template analysis as a supporting technique for thematic analysis of data.26 An initial template was used containing the four constructs of the General Theory of Implementation. In 2013, the main researcher conducted the analysis by identifying sections that considered implementation approaches or effects of the project, and labeled them with a code referring to the content (either a code from the template or, if necessary, a new code). An iterative process was chosen for thematic data analysis and modification of the template. PJD and FS did not participate in the first round of data analysis in order to prevent directing findings to their personal experiences. Also, the entire research team discussed the initial template, major alterations and the final template in order to explicate possible preconceptions, prevent early narrowing of ideas and challenge the thought process.

Documents
All documents produced or collected by the project staff were available to the research team. Since our interest included the implementation approach, we selected documents reporting meetings of the project’s agents as primary documents for analysis. These included minutes of all meetings of the project team and the project group, project proposals, progress reports, and minutes of meetings with the ministry of Health and other specially organized meetings with other parties. Of the staff meetings, which took place weekly, minutes of one meeting per semester were selected. Other documents could be studied as secondary documents if the content of primary documents pointed to information that might be relevant to our research,
for example if proceedings referred to published articles about the Display Project or the survey on stakeholders’ attitudes that was conducted in 2013.

**Ethical considerations**
This study was approved by the Ethical Review Board of the Dutch Society for Medical Education (NVMO-ERB, file number 288)

**RESULTS**
In analysis, we recognized several kinds of effects, both within and outside the scope of training quality and individualization. Also, we recognized several distinctive features of the implementation approach that influenced these effects. Effects and implementation approach were found to be strongly interdependent: effects were influenced by the approach, and the approach was adapted depending on developing effects. We present our findings in themes, illustrated by specific examples from our data.

**Transparency**
A national website was created to facilitate display and comparison of electives of nine participating specialties (www.opleidingsetalage.nl). Several rounds of input of trainees and program directors resulted in adjustments to the website, until all the requirements were met. In the course of the project, preexisting electives were displayed on the website. Also, new electives were developed, sometimes by collaboration of two departments. Most electives aimed for medical specialization, while some focused on generic competences, such as supervising skills. By the end of the project period, the majority (222/271, 79%) of program directors of the nine participating specialties had at least one elective on the national website.

**Approaches and effects**
The project team stimulated display of electives by appealing to the program directors’ professional entrepreneurship and to their personal motivation, for instance by listing advantages of participating in the project, like attracting the best residents.
A few program directors created informative displays and started to develop new electives at an early stage of the project, while the majority did not immediately start to create electives for the display website. When the response fell short of the project team’s expectations, documented remarks of the project leader (“We’re running behind schedule”) indicated a growing concern about meeting the requirements for continuation of the project. These stipulated that 80% of the training departments had to have at least one elective displayed on the website by mid-2011.

Aiming to speed up the process, the project team started to put additional pressure on program directors by referring to these requirements and the strict deadlines. This provoked meaningless contributions threatening the quality of displays and the motivation to develop displays. For example, when the project team communicated that program directors were responsible for meeting the requirements for continuation of the project, program directors of one specialty all published identical electives. The project team then had to adapt the formal guidelines for electives on display by adding that they had to have distinctive features. The project team increased pressure by monthly mailings with information on which training departments had electives on display, and announced that funds for developing electives would be available to all specialties that met the deadline. In response, one specialty announced that they did not intend to apply for this fund. Eventually, seven out of nine specialties met the requirements before the deadline. However, the project group judged that many electives on the display website may not be as informative for trainees looking for an elective as they had strived for.

**Competition**

While the display of electives on the national website increased the feasibility of individualizing training, it did not appear to lead to a competition for particular electives between residents from different departments within the time frame of the project. Hence, no indications of a difference in quality between the electives could be deduced so far from the residents’ preferences.
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Approaches and effects
In discussions with program directors and in the survey that was held about their attitudes, it became clear that they felt strained by the requirements of the project, while this was not compensated immediately by an advantage like the addition of extra, highly motivated, trainees to their department. For some of the program directors, this diminished their commitment to the project and their faith in the proposed mechanism. Since the prospect of competition between residents for the best electives had been part of the project team's appeal to participate in the project, the delay in the emergence of this expected effect was particularly disappointing for program directors who had made a special effort to create an informative display of their elective.

Obstacles for competition
Various issues that were regarded as hindrances for the intended competition were raised during meetings of the comprehensive project group, ranging from social-structural obstacles like geographical positions and national regulations (Capacity) to social-cognitive obstacles like competing interests and lack of knowledge and skills (Potential). While some of these obstacles could not be eliminated within the premises of the project, others were successfully addressed by initiatives of the project team, which tried to facilitate individualization of training by a variety of approaches, whether these were within the original project plan or not. We selected a number of examples to illustrate the nature of the perceived obstacles and to demonstrate that dealing with these obstacles may impact the feasibility of individualizing training and introducing competition in the future.

Social-structural obstacles
A) Some stakeholders felt that trainees preferred to live in certain geographic regions in the country rather than in others, and that their family lives might prevent them from choosing an elective further away.
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Approaches and effects
The project team had aimed for broad stakeholder involvement to raise ownership and support among stakeholders, and to prevent objections to the project. This stakeholder involvement was accommodated by regular meetings with the comprehensive project group, which comprised representatives of program directors and trainees of all specialties, hospital boards, training staff and regulatory bodies. Nevertheless, this particular obstacle to resident mobility as perceived by members of the project group could not be changed during the project. Since no concession to this issue could be made in the design of the project, it kept reoccurring in discussions as a barrier that could not be resolved. For some stakeholders, this diminished their belief in the project’s impact and their inclination to employ the mechanism of transparency and competition.

B) The national regulations concerning modification of trainees’ training schedules were very strict, which impeded actual individualization of training during the year.

Approaches and effects
Our analysis revealed that an important part of the efforts that went into the implementation process was directed at altering existing national regulations, since they hampered the mobility of trainees. This had been partly anticipated by the initiators and was soon repeatedly stressed by the project’s stakeholders. Impelled by the experienced need for change in regulations, the project team persistently discussed this when they spoke with representatives of the ministry of Health. This eventually led to modifications of the regulations for the nine specialties involved, creating more possibilities for trainees and program directors to make adjustments. Also, the original regulation system was evaluated by the government and changed into another, somewhat more flexible system for all specialty training programs. This created an important foundation for the individualization of training, in practical terms but also in establishing the opportunity to choose an elective as a real and feasible option for trainees.
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Social-cognitive obstacles

A) A recurrent topic in discussions at meetings was that senior trainees were valuable for clinical work, which made it attractive for program directors to retain them at their department. This could be in conflict with the trainees’ interests, since an application for an elective at another department had to be authorized by the trainee’s current program director.

Approaches and effects

We noticed that the implicit tension between the interests of training and the interests of clinical practice became an explicit concern, as the project team addressed this issue in their communication throughout the project. Directed at program directors, this mainly included a moral appeal that sincere program directors should separate the interests of clinical practice from the interests of training. For example, a letter to all program directors reminded them that it was their responsibility “to enable trainees to make choices that are important for their training”. At the same time, the project team communicated to trainees that program directors are entitled to expect a convincing argumentation for their choice of electives. In this way, the project reinforced the importance of keeping an accurate portfolio of training developments, which was an important element of the newly implemented specialty training programs.

B) When trainee representatives in the project group were asked what prevented trainees from enrolling in electives, they revealed two weaknesses of trainees regarding enrolling in electives. Firstly, it became clear that many trainees seemed to have little knowledge about the exact regulations and their rights regarding training possibilities. Secondly, residents had poor negotiation competencies to elicit permission from program directors.

Approaches and effects

The project team took on the task of informing trainees about the exact regulations and their rights regarding training possibilities. This involved various approaches outside the original scope of the project, ranging from repeated explanations about
the regulations during meetings and an informative section on the website to workshops and videos about negotiation strategies. As a result, we noticed that the discourse about the importance of electives started to change. We saw that, in the course of the project, individualizing training by deliberately choosing electives was increasingly considered important for trainees to create a personal training profile. This notion started to spread through the community of trainees. For example, in discussions about developments in health care and future tenure, the Display website was brought up as a relevant development for trainees. We even noted that “display elective” appeared as a novel term in discussions, to indicate a consciously chosen elective in another hospital. Furthermore, some specialties that previously lacked dedicated time for electives in their official training programs started to include this in their curricula. We also observed that the discourse regarding who should be in control over planning a resident’s training started to change in the course of the project period. We observed a gradual shift from a discourse in which it was accepted that program directors were in command of planning training, to a discourse in which trainees’ views of their own training priorities were regarded as relevant. For example, the project started off without a website-functionality for trainees’ reviews of electives, even though this was one of the original objectives of the project; in the final stage, however, the functionality was added and regarded as an important element to stimulate training quality.

DISCUSSION

This study investigated the effects of implementing transparency and competition in medical specialty training in relation to implementation approach. We found effects both within and beyond the scope of the goals of training quality and individualization. Not only did the project initiate transparency and facilitate individualization, it also raised awareness of modern training principles and changed the discourse about control over resident training. We noted that these effects were closely related to aspects of the implementation approach, including: inviting program directors to display electives, appealing to their professional entrepreneurship supplemented with pressuring participation, involving all stakeholders, and broadening communication and actions beyond the original scope of the project to address unforeseen obstacles.
Comparison to the literature
Implementing transparency involved facilitating display of information about training electives on an openly accessible national website. After four years, about 80 percent of participating specialty training departments had an elective displayed. At that point, a considerable amount of the information on display was not very clear, which can be regarded as limiting actual transparency and competition. However, the mechanism that started off in this way has the potential to stimulate quality of information and thus further increase transparency. For example, when the English National Health Service introduced transparency, they did not start off with perfect data: in some cases, less than 50 percent of the information fields were coded correctly. After introducing transparency, coding accuracy improved greatly.10 Several conditions other than transparency of information came up that were important for individualizing training, such as flexibility of regulations and trainees’ capability to enroll in electives. We noticed that the intended approach to implementation was adjusted to address these conditions, and that this was important for the achievement of intended effects. This finding of differences between a formal plan and the actual execution of a plan resembles the acknowledged difference between the “intended” curriculum and the “enacted” curriculum in medical education.27 Social and practical circumstances contribute to this difference, and in pursuit of congruence between the two levels, these circumstances should be anticipated while developing the plan. Along these lines, general change management advice to adjust one’s approach to circumstances is fitting to medical education innovation as well.28 We found that the implementation in the present project relied heavily on involving all stakeholders of specialty training. This generated communication between all parties throughout the country and facilitated meaningful changes for training, rather than merely imposing the execution of a new method. Generating communication between all professionals involved has been suggested before as a fitting approach for working on quality of medical specialty training.29 It could be seen as creating room for so-called re-invention, which refers to the modification of an innovation by its users in the process of adoption. This process helps to match the innovation to the adopter’s problems. Re-invention fits innovations that are complex and aimed at solving a wide range of problems.30 It is known to be applied by users with a strong
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sense of pride, for whom ownership is important, and medical professionals are considered to belong to that type of users. Furthermore, for leading professionals it has since long been recognized that “the amount of management added to their self-management” needs conscious balancing, because limiting their possibilities for self-determination introduces the risk of demotivation. In consonance with this, we observed that program directors who felt pressured to display information were inclined to take short-cuts with contributions of low quality, and to perceive these contributions as an extra workload for which they received nothing in return. This observation is in line with similar experiences during other innovations in specialty training, like workplace-based assessment.

Strengths and limitations

By looking into the effects of introducing transparency and competition in specialty training, our study adds to knowledge about conditions and obstacles that may be relevant for introducing this innovation into this field. We focused on one specific setting as a case to study. The consideration of this unique case can inform the consideration of other cases that involve issues of individualization, quality of specialty training, transparency and competition.

Our study adds to existing research on innovation in medical education by going beyond a separate investigation of either the effectiveness of an implementation approach or the effects of an innovation. Instead, we studied the combination of these elements to do justice to the complex nature of innovating specialty training. Theory from implementation science provided a basis to do so. Still, our findings are limited by resulting from a single case of a specific innovation in a specific context. Other cases of implementing innovation in specialty training are likely to have aspects in common with our case, either regarding the nature of the innovation (e.g. multiple diverse stakeholder groups, aiming to increase training quality) or the nature of the implementation approach (e.g. in a national project). People involved with other cases of innovation in specialty training could benefit from those findings that seem relevant to their specific setting.

Our research approach was not suited to assess the quality of the electives as followed by trainees in clinical practice. The positive effects that we found on fundamentals
like awareness of modern training principles and opportunities for individualization of training schedules seem important contributions to quality of training. However, it seems unlikely that this may already have caused a notable increase in training quality.

**Implications for practice and future research**

Our findings hold practical implications for both expectations of transparency in specialty training as well as for implementing innovations in specialty training. Although we did not study the quality of electives that trainees chose, our findings suggest that transparency can contribute to quality improvement, but that it takes at least several years to achieve this effect. This illustrates once more that innovation in medical education takes time\(^1\), as is known about innovating healthcare.\(^{35}\) This knowledge is important for managing the expectations of anyone who intends to implement or study transparency or other innovations in specialty training; time should be taken to assess innovations. For complex innovations such as this one, it seems sensible to plan pilot periods of more than the four years that were available for the project in this case study. Another challenge for the implementation of this innovation was the delay in the emergence of effects. People who put effort into the innovation, like the program directors in our case, expect something in return for their efforts. Solutions to prevent disappointment might include managing expectations and indicating noticeable intermediate effects. Further empirical research is needed to proceed from the speculative level of these suggestions.

Our findings call for reticence in pushing for progress and deadlines, which seems to be elicited by quantitative planning and minimum requirements for grant allotment. Both project leaders and funders of innovations should accept the challenge of setting goals that seem within easy reach, and instead strive for meaningful change.\(^{1,36}\) The people involved with specialty training may not be professionals in the domain of management, but managers should keep in mind that they are professionals within the medical domain and should be treated as such.

Our results highlight that the best interests of training can be hindered by the interests of clinical practice. This matter of attention for training quality has been recognized by others who contemplate improvements in medical education.\(^{37}\) Our findings suggest
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that the interests of training can be brought to attention by appealing to professional responsibility of the professionals involved in specialty training. However, such an appeal can hardly be expected to solve this challenge completely, since patient care is as least as important to program directors as specialty training. Contributions to meeting the challenge of balancing the service and education missions of training departments are needed urgently, because an unfavorable balance might jeopardize future initiatives to improve training quality.

CONCLUSION

Transparency in specialty training has the potential to contribute to individualization of training. Other conditions can be found important for resident mobility, for example regulations and the capacity of trainees to organize their own training. Detecting and addressing these required conditions is facilitated by an approach that involves all stakeholders and requires willingness to go beyond implementing transparency. Meaningful changes to training may be achieved by appealing to professional attitude, providing freedom and allowing reinvention rather than by pressuring participation. The effects of implementing transparency and competition in specialty training emerge over many years. Accordingly, the assessment of this innovation remains unfinished at this point and should be ongoing.
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