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The Feasibility of Longitudinal Patient Contacts in a Large Medical School

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ABSTRACT

Problem: Longitudinal patient contacts are being implemented worldwide as a way to enhance a patient-centered orientation among medical students. In large medical schools, longitudinal integrated clerkships may not be feasible, so other ways must be sought to expose students to prolonged contact with patients. *Intervention*: Medical students were attached to a family practice and assigned a panel of 4 patients to follow over the 3 years of their clinical training. Their role was that of companion on the patient's medical journey. The program consisted of several encounters, joining the patient in the medical setting for significant events, and written assignments. This intervention was piloted with 35 students. We describe our experiences from the 1st pilot year of this program. *Context*: The intervention was performed with 3rd-year students—of a 6-year curriculum—at a large medical school in the Netherlands. *Outcome*: Finding enough patients per practice was feasible. On the whole, students fulfilled the program's expectations regarding frequency of patient encounters and assignments. The most frequent problems encountered by the students were uncertainty about their role and setting boundaries in their contact with the patients. They needed more preceptor supervision and coaching than they received. *Lessons Learned*: For junior students, close and structured supervision led by the faculty is necessary to help them navigate and learn from a panel of patients. Students need guidance about what role they should take on and on how to manage both their own and their patient's expectations. Guided reflection is necessary to help students give meaning to their experiences with patients.

Introduction

A patient-centered orientation of the doctor is considered to be important for patients.[1,2] Medical curricula, in general, aim to enhance or at least nurture a patient-centered orientation among their students. A large body of evidence states that students show a decline in patient-centeredness during medical school, especially during the traditional "block" rotations or clerkships.[3] In response to this observed decline, various changes in curricula aimed at nurturing patient-centeredness are being implemented worldwide. One approach is to increase the time over which a student follows an individual patient, so-called longitudinal approaches.

Three approaches to longitudinal student–patient relationships can be distinguished. The first one is organized in the preclinical years, when a student follows one or more patients or families.[4,5] The second type is a longitudinal placement parallel to clerkship rotations: A student is placed with a preceptor in a clinic—usually in the community—for months to years.[6] In this format, students see new patients and follow them up. The third approach is the longitudinal integrated clerkship (LIC), in which students participate in the inpatient and outpatient care of patients in up to 10 specialties simultaneously over periods of up to a year.[7] In this period they follow a panel of patients across multiple disciplines.

Research supports the use of these longitudinal student–patient relationship strategies. Kumagai showed that following a patient in the preclinical years helps students to understand the uniqueness of each patient and his or her response to being ill,[7] important elements of patient-centeredness.[8] The reviews by Thistlethwaite and by Walters, and a later article by Henschen, showed that both longitudinal attachments in the community and LICs have a positive, though modest, effect on students' patient-centeredness.[6,9,10]

As the decline in patient-centeredness takes place during the clinical years, it seems preferable to implement longitudinal student–patient relationships in this period. Up to now, LICs typically have been implemented in small cohorts of, on average, 20 students (range =2–85).[11] This could be explained by the important practical barriers to longitudinal attachments and LICs, including increase in preceptor time, higher costs, and logistical complexity.[12–14] This also raises concerns that a comprehensive LIC approach for all students at medical schools with larger cohorts (i.e., greater than 100) may not be feasible.

We designed and piloted a fourth approach—a patient panel program—to facilitate longitudinal student–patient relationships. We borrowed elements of longitudinal attachments and LICs and increased the length of student–patient contact to 3 years. In this article, we describe our pilot, describe our evaluation of the 1st year of the pilot, and report the lessons learned. We focus on answering the following questions needed for program development and refinement: (a) How feasible is it to organize a patient panel program in family practice? (b) To what extent do the planned learning activities take place? (c) How do students experience the organization of the patient panel and their patient encounters? Our aim is to give educators from large schools planning a longitudinal patient program in primary care some points to take into consideration.

Program/curriculum description

Context and rationale

In the Netherlands, medical schools have a 6-year curriculum, with clerkships starting in the 3rd or 4th year. At our medical school in Utrecht—with a yearly intake of 300 students—the first clerkship rotation (12 weeks) takes place at the end of the 3rd year. In 2015 we implemented curricular reform aimed at increasing continuity. We integrated traditional block clerkships to create five 3-month integrated clerkships from the end of Year 3 through Year 5. These integrated clerkships cover 12 clinical specialties in all.

Although the integrated clerkships can improve two of the principles of continuity—continuity of supervision and of the curricular experience—we were concerned that these 3-month periods would be too short to enable continuity of care, the third principle.[7] Therefore, we developed a longer patient panel program parallel to the curriculum.

The Dutch health care system is very much oriented toward primary care and is centered around the family practice. Family practice is the sole provider of primary care and serves as the medical home for all patients. It is where all health care starts, is coordinated and managed, and then ends for each patient. Thus the family doctor knows the most about the patient and his or her context, an important element of patient-centeredness, and can model best how to use this knowledge. For this reason we housed the patient panel within family practice.

Program goals and description

Our goal with the patient panel program was to promote patient-centeredness in students during their clinical development. Scholl described four principles of patient-centeredness.[8] We focused student attention on three of these: essential characteristics of the physician such as empathy and respect, the patient as a unique person, and the bio-psychosocial perspective. Our objectives were to improve student understanding of patient-centeredness, increase the value that students put on it, and encourage incorporation of its principles in the students' professional identity. To achieve this, we exposed students to prolonged one-on-one contact with a core set of patients. We also asked them to reflect on the impact of illness on a patient's life, on the influence of the patient's context on the illness and the patient's experience, and on understanding how complex it is for patients to deal with several health professionals simultaneously.

The patient panel program started in the 3rd year during the first of the five integrated 12-week clerkships. This 3rd-year clerkship included family medicine, internal medicine, and surgery. Students spent the first and last clerkship week in a family practice and became acquainted with the practice, the patients, and the family doctor preceptor. The preceptor and student chose four patients for the student to follow over the next 3 years (or until the patient's passing). They were encouraged to choose one from each of the following categories: a chronic patient, a frail elderly person, a pregnant woman or a young family, and a patient newly diagnosed with cancer. Students followed their panel parallel to their classes and integrated clerkships. To ensure student identification with the perspective of the patient rather than that of the doctor, students assumed the role of "companion to the patient on their medical journey." This was in deliberate contrast to the role of care provider they assumed in their integrated clerkships. Students first visited the patients in the practice or in their homes to interview them about their illness, their social context, and the care they were being given. Students then saw each patient at least twice a year. Whenever

possible, they accompanied their patients on trips to the hospital or other healthcare settings when there was a significant medical event. Students also visited their family practice site four times a year to discuss their patients with their preceptor. Time was set aside in the curriculum and the integrated clerkships to accommodate these visits.

Students were required to log and reflect on every contact. In addition, they were to complete six essay assignments that probed for more in-depth examination of the patient encounters. For instance, assignments in the 1st panel year included a short essay on why they chose a certain patient and what they expected to learn from him or her and an analysis of the network of persons involved in the patient's care.

Implementation and evaluation of pilot

Pilot implementation

We opted to first pilot the patient panel program with a small cohort of students and preceptors along with a multipronged evaluation of the pilot to determine potential barriers, challenges, and needs and to allow for program refinements before full implementation. We timed our pilot with the pilot of the first integrated clerkship, which started in November 2015. We invited 35 beginning 3rd-year students to participate. We recruited family doctor preceptors from those who were already regularly involved in clerkship teaching. Student and faculty development were provided through face-to-face meetings and detailed written course materials.

Data collection

We used a variety of methods and instruments—both quantitative and qualitative, described next—to evaluate the patient panel pilot. Our evaluation protocol received approval from the ethical review board of the Nederlandse Vereniging voor Medisch Onderwijs (Dutch Association for Medical Education) nr 544.

Questionnaires: Both students and preceptors were asked to complete questionnaires. Students completed a 10-item questionnaire on student satisfaction 7 months into the pilot. All items were rated on a 5-point scale except the overall program evaluation question, which was rated on a 10-point scale to be consistent with the institution's program evaluation scale. Preceptors completed two items about the patient panel in an 18-item questionnaire about the new curriculum after 4 months.

Focus group: Seven months into the pilot, students were invited to one of three focus groups to talk about their experiences. The three focus groups were conducted by different moderators (one of which was the program director, AS), using the same protocol. No audio recordings were made, but careful notes were taken during all of the group discussions, including verbatim quotes. We also held a group meeting with the preceptors to talk about their experiences (after 4 months, attended by 23 of the 35 preceptors).

Logbooks: To determine the number and type of meaningful contacts students had with their patients, we analyzed the student logbooks, extracting frequency, type of patient contacts, and patient category (chronic, elderly, young family, cancer). We considered a contact meaningful if it was related to other topics than appointment scheduling. We obtained informed consent for reading the logbooks, which were anonymized by a research administrator. Students received up to five e-mail and/or telephone reminders to send in their logbooks.

Data analysis

We calculated descriptive statistics for the questionnaire responses and the quantitative entries in the logbooks. From the answers to the open-ended questions on the questionnaires, the first author extracted key topics and compared them to the focus group themes below.

For the student focus group notes, the following procedure was followed: After familiarizing herself with the notes, the first author (SM) conducted initial open coding of the notes and created a codebook for thematic analysis. The first author and a fellow lecturer then applied the codebook to independently open code the notes from the first focus group. The two coders discussed and reconciled their differences and refined the codebook. Using the refined codebook, the second coder coded the notes from the two other focus groups. SM took the lead in further abstracting, organizing, and synthesizing the themes. She then engaged the larger study team in the final analyses, and all agreed with the themes identified. NVivo 11 was used to facilitate the coding.

Results

Thirty-five students participated in the pilot. The students averaged 20 years of age. There were 11 men, which was representative of the ratio of men to women in our medical school. Thirty students (86%)

TABLE 1 Student activities: Number of encounters with their patients per student, per patient category by type of encounter during 4 to 8 months

	Home Visit	Practice Visit	Joined Patient Elsewhere	Phone Contact	Digital Contact	Sum of Face-to-Face Contact/Patient Category	All types of contact/ patient category Mean (SD, range)
Elderly Patient	1.8 (0.8)	0.4 (1.0)	0.3 (0.6)	0.9 (1.1)	0.6 (1.7)	2.5 (1.3)	4.1 (2.1, 1-10)
Young Family	1.5 (0.8)	0.3 (0.4)	0.5 (0.5)	0.5 (1.0)	1.3 (1.6)	2.2 (1.5)	4.1 (3.4, 1-9)
Cancer Patient	1.6 (1.6)	0.2 (0.5)	0.7 (1.3)	0.8 (1.4)	1.1 (1.8)	2.5(1.9)	4.5 (3.0, 1-12)
Chronically Ill Patient	1.4 (0.8)	0.6 (0.9)	0.4 (0.6)	0.9 (1.3)	0.7 (1.2)	2.3 (0.7)	4.0 (2.0, 1-10)
Total Number of Patient Contacts per Category, per Student	6.3 (2.3)	1.4 (2.0)	1.9 (1.9)	3.1 (3.4)	3.7 (3.8)	9.5 (3.2)	16.7 (5.4)

Note: $n = 25$. Values are mean (standard deviation).

completed the questionnaire, 21 (60%) participated in the focus groups, and 25 (71%) submitted their log-books. Of the 35 family doctor participants, 14 (40%) completed the questionnaire. We combined the results from all of our information sources and present them here, organized by evaluation question.

How feasible is it to organize a patient panel program in family practice?

Finding 35 family doctor preceptors to host the pilot required several consecutive actions. First a letter of invitation was sent to all 160 family doctors who regularly host 5th-year clerks and to another 24 who had hosted 1st-year students in the past. This was followed by in-person recruitment during a teacher training session and finally personal phone calls to individuals.

The preceptors were generally positive about the patient panel program pilot. They enjoyed it and found that the concept worked. However, they did describe one common challenge: monitoring their student from a distance during a busy practice. This included both updating the student about patients' medical events and staying updated themselves about the student's encounters with their patients. Students rarely reached out, and the program director remarked that even struggling students seldom sought contact with her despite a monthly open consultation.

Finding enough patients for each student was feasible. By the end of the first 12-week integrated clerkship, 78% of students had four patients in their panel; of the remaining students, all but one had three patients. By 3 to 5 months later, 31 students (89%) had included four patients.

To what extent do the planned learning activities take place?

Students, on average, had 17 meaningful contacts with their panel in a period of 4–8 months, depending on the moment of inception (Table 1). The range was wide, from 11 to 26 contacts. This resulted in four

contacts on average per patient, 2.4 of which were face-to-face contacts (home, practice, hospital). Students were required to make two planned visits at home or in the practice in this period. With an achieved average of 1.9 visits per patient (7.7 visits/4 patients) the requirement was generally met.

The most frequently reported type of contact (almost 40%) was the home visit. The frequency of contacts differed very little between patient categories, cancer patients being contacted slightly more frequently. In addition to planned visits, students were encouraged to join the patient for significant medical events. On average they participated in only two such visits for their entire panel. Students explained that they were not always able to obtain permission to leave their integrated clerkship to join a patient elsewhere. Another impediment was that students were not allowed in the operating theater of a hospital other than their clerkship hospital.

The time students spent on the panel program was reasonable and within the limits of the curricular time set aside for it. They reported spending on average (in the period of 4–8 months) a total of 12 hours (range = 6–25) on their patient and mentor encounters and 5.5 hours (range = 0–10) on travel time. In the curriculum, 28 hours had been set aside for this program. The wide range reflects the varied engagement of the students and their potential varying views of the importance of the patient panel.

How do students experience the organization of the patient panel and their patient encounters?

Students rated the overall program 4.9 (range = 3–7) using the institution's 10-point evaluation scale, with 10 being best. They found the patient contacts of moderate instructiveness (3.0, range = 2–4), and the assignments of minimal instructiveness (1.8, range 1-3), arguing the assignments had insufficient depth (5-point scale from 1 [not instructive at all] to 5 [very instructive]). The ratings were supported by comments on the open-ended questions and findings from the focus

groups, which revealed two key themes: learning for time invested and emotional burden of uncertainty.

Learning for time invested

Students felt that the time they spent on the program was not in proportion to the amount of learning gained. They felt the idea of the patient panel was promising but not in its present form. Many students did report enriching experiences in their encounters with patients, particularly with patients with cancer and chronic illnesses. They described learning to see things from different perspectives and being able to help and support patients, such as when accompanying their patient to specialist appointments. However, some reported no learning, and others felt they had already learned what they needed through personal experiences with ill family members. Also, students generally felt that discussion of their patient panel with their preceptors did not add to their learning.

Students complained about the time cost of logistical challenges. This included the many calls and digital messages needed to schedule appointments with their patients, as well as the time expended for travel and delays in medical care.

> I joined a patient for an outpatient visit; I travelled 45 minutes, sat in the waiting room with the patient for almost two hours. All that for a 10-minute appointment. I could have spent my time in a more useful way.

Students also explained that their subjective experience of the time spent on the patient panel was different from the actual number of hours spent on it; they thought about their patients every day, worried when they were not able to reach a patient, and worried about missing out on experiences when neither the patients nor the preceptors kept them informed about events. The students recommended a decrease in the number of patients on the panels.

> The patient panel is in my head all the time, unconsciously, because patients can phone any moment.

> The panel gives me a lot of stress in organizing patient visits and in between-visits and keeping up-to-date with their events.

Emotional burden of uncertainty

Students described feelings of being overwhelmed by the uncertainties they experienced in the program and recommended enhanced supervision and guidance.

They were uncertain about their *role*, the program *expectations*, and setting *boundaries*, each of which is further described next. A minority of students indicated that because of the high emotional burden, they lost rather than gained empathy through the patient panel experience.

Students felt unsure about their role: "You're not a doctor, not a friend, not a family member, what are you?" In their nonmedical roles, some students were uncomfortable with what they felt were burdensome intrusions into the patients' lives. They would have preferred being able to contribute in a medical way, occupying a role that was more clear and familiar to them.

> Sitting in the living room with a terminal patient and their family, you would like to talk about impending death, but without a white coat you can't sit "on the other side of the table."

Students also had to navigate some unexpected role conflicts. For instance, a student in discussion with the preceptor accidentally divulged information that a patient had shared with the student, not realizing the patient had wanted to keep this information hidden from the preceptor.

Although some students felt well coached, most students described insufficient guidance from their preceptors regarding required activities and expectations. "My family doctor had no idea. I depended entirely on my own initiative." Some preceptors were perceived to know little about the program and in some cases had not read the instruction book. However, the instructions themselves also played a role; they were intentionally written to leave room for interpretation so that students could adapt the program to the opportunities that arose. The expectation that students learn to make choices and set their own priorities created uncertainty and stress. "You can always do more. It is never enough for yourself, because the instructions are unclear." Despite most students feeling comfortable with their preceptors (3.8 on a 5-point scale, 5 being the best), some students felt shy about asking their busy preceptors for help.

Students struggled with setting boundaries, both in determining what was appropriate and in knowing how to set them. Some students felt pressured by the preceptors not to miss any event. Most students had given patients their phone numbers. Some felt that they had to react to text messages and phone calls at all hours, which was an imposition on their private life. "There is too much of a breach on my privacy; the family doctor has a work-phone, but I don't." One of the students was invited to a memorial service and

felt she could not decline. In contrast, there were also students who were well able to articulate and draw boundaries around when and how they wanted patient contact.

Discussion

We piloted a longitudinal patient panel program based in family medicine that runs parallel to required clerkships and performed an early evaluation of the pilot. Our goal was to gather data on feasibility of recruitment and program activities as well as student experiences in order to refine the program as we were going along.

Finding enough patients to participate was feasible. We were able to recruit the number of needed preceptors with effort. The participating preceptors generally had positive experiences but had difficulty maintaining communications with their students. The program ran as expected for the activities completed and the amount of time that students spent on the curriculum. However, students had mixed reactions to the curriculum. Although valuable learning was reported by some students, many felt the return of learning for time spent was low. Students were also challenged by the uncertainty around their role, program expectations, and boundaries. We further discuss our findings in light of the lessons learned and implications for future implementation.

Lessons learned and future directions

The effort required to find enough family doctor preceptors for the pilot suggests that our regional capacity may be insufficient to provide family practice preceptors for all three times the 300 students in a 3-year longitudinal program in addition to the regular clerkships. We will expand the program to include other specialties and preceptors who are not already teaching in the curriculum. To reinforce the students' role as companion on the patients' journeys, we will emphasize two activities that are applicable across nonprimary care specialties. One is to accompany a panel patient to all interventions/consultations to understand implications of these visits for the patient. Another is to perform a home visit to understand the patient's home context and the bio-psychosocial perspective.

Students were able to complete program activities in the time set aside in the curriculum. However, the students' feeling that the amount of time spent on the program was not in proportion to how much they learned from it calls for reflection. It may be explained in part by findings in a study on learning from patient instructors by Henriksen and Ringsted, where students doubted whether teaching about rheumatism by patient instructors constituted "legitimate teaching."[15] The authors found that students seemed to value biomedical knowledge over patients' experiential knowledge. The authors postulate that in contrast to the learning of biomedical knowledge, learning from patient experiences requires a more active and reflective approach to learning. Students must reflect on what they learn from the patient, place this in the context of their prior knowledge and experiences, and weigh its impact. Our students were quite young and may have been insufficiently able to reflect on and learn from their experiences without guidance. Several students were not able to transform frustrating experiences into valuable lessons about the patient's experience or health care system. In addition, students struggled with their uncertainties and their worry over their patients, reporting the cost of "mental time" associated with the program. Yet students were reluctant to reach out for coaching to either their busy preceptors or the program director.

To provide increased support for student reflection and learning, we plan to implement faculty facilitated meetings with groups of students using a longitudinal group structure. Group discussion and reflection about their patient experiences with a faculty member with time dedicated to the group may help students gain insight into their feelings of irritation or of being overwhelmed by negative experiences.[16] In particular, debriefing with a clinician may help students focus on lessons in patient-centeredness and with the transfer of their experiences to the clinical activities in their parallel clerkships.[17] Also structured reflections using a cognitive process tool such as one on difficulties in the communication with patients has been shown to facilitate finding creative solutions.[18] In addition, the longitudinal structure may help create the safety that students need to seek help from either a faculty member or fellow students. The ability to share challenges and uncertainties around roles, expectations, and boundaries may help students feel more empowered in overcoming challenges. It also may facilitate their professional identity formation by further building upon the initial training that students received in professional identity formation in their preclinical years. Ultimately, being part of a group that nurtures a feeling of belonging may in itself motivate increased engagement with the program.[19]

Finally, students needed a clearer role with their patients. They were primarily unsure of what a non-medical role entailed. Some felt that they were a burden to the patients because they were only taking from and not giving back to the patients. It is possible that over time and with improved supervision and group debriefs, students struggling with roles and boundaries will be able to work out the best balance for themselves. However, if the friction is too great, it will hamper learning. Moving forward, we will provide more explicit guidelines and instructions about roles and boundaries. This includes educating groups on communication strategies, examples of how students may support or give back to patients in a non-medical role, and examples of activities with which students should not engage.

Some might argue for the solution of giving students a more medical role rather than one of companion on a patient's journey. However, finding appropriate medical roles for the student new to the clinical workplace is difficult and is logistically challenging when working with community doctors who may be geographically distant and whose patients are not affiliated with the medical school. More important, our primary goal is to have students experience and understand the patient's context from the perspective of the patient. Giving students a medical role may erode the students' ability to do so. Therefore, we are continuing the program with a nonmedical role for students.

Our targeted early evaluation of a pilot longitudinal program has allowed us to nimbly make adjustments to the pilot as it progresses. We recommend this approach as a process for more rapid prototyping to others developing longitudinal programs. We continue to perform focused evaluations of each phase of the pilot and anticipate additional evolutions of the pilot program before full implementation. Future evaluations will include more longitudinal elements such as whether or how students' experiences change over time as they gain clinical experience. In addition, we will explore what and how students learn from their patient contacts and how patients perceive their participation.

Limitations

We developed our curriculum for and conducted the pilot within the context of the Dutch medical and medical education system. However, our experiences may be applicable to other large medical schools and other health systems with primary care doctors or doctors who provide medical homes for patients. Our evaluation was an early evaluation (end of Year 1 in a 3-year program) designed to answer specific questions about feasibility and inform ongoing refinement of a longitudinal pilot. It does not address the patient experience or more robust student outcomes that will be evaluated at the conclusion of the pilot program. We share our lessons learned now to illustrate how such a program might work, and how it can be evaluated and adjusted while in development, to best suit one's local context.

Conclusion

In conclusion, it may be possible to facilitate longitudinal student–patient relationships through a new patient panel approach using elements of longitudinal attachments and LICs. Our early evaluation of a pilot experience revealed various challenges and potential solutions that we will be able to incorporate into the ongoing longitudinal pilot. Our initial lessons learned may help others try similar new approaches to creating opportunities for longitudinal student–patient relationships and to evaluating early for timely improvements in longitudinal pilots.

Acknowledgments

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