Family Medicine Preceptorships for First Year Medical Students: Durable Educational Value Amid Healthcare Transformation
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Abstract
The required Family Medicine Preceptorship in the first-year curriculum at the Duluth regional campus of the University of Minnesota Medical School has existed for decades and has provided students with opportunities to work with regional family physicians. Exposing medical students to excellent primary care of patients early in the curriculum remains an educational priority. This time series analysis examines physician willingness to participate along with the teaching physician practice structure (physician-owner versus employed physician). A downward trend in the percentage of physicians agreeing to serve as preceptors is reported (1992 at 83.6%, 2002 at 71%, 2012 at 61.2%, and 2017 at 47.9%). The data reflects a transition from independent practice to larger health systems. Percentages of physicians in large health systems were 8.3% (1992), 28.8% (2002), 64.3% (2012), and 61.9% (2017). This time series analysis also provides comparative data summarizing student evaluations of the Family Medicine Preceptorship experiences from the years 1993, 2014, 2015, 2016 and 2017. Despite changes in practice structure and fewer physicians agreeing to precept, the data demonstrates consistently high ratings by medical students over time.

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Introduction
In the current context of grave physician shortages and health care transformation, there is a nationwide recognition of the value of Family Medicine. Early and formative medical student experiential sessions with Family Physicians are vital and support the selection of Family Medicine as a specialty choice. Such sessions have been documented as one of the determinants reinforcing career choices. The Duluth regional campus' curriculum and the efforts to admit the 'right' students for Family Medicine remains resoundingly successful – with 46.7% (n = 953 of 2042) of graduates entering Family Medicine residencies since 1976.

A critical component of the University of Minnesota Medical School Duluth Campus curriculum is a robust Family Medicine Preceptorship in place since 1972. The required course has existed in a similar format for the past 45 years, pairing all first-year students ‘one-on-one' with community family practitioners. Students join local Family Physicians for half-day sessions scattered throughout the entire first year of medical school.

This research summarizes the student perceptions of the preceptor experience over 24 years. Longitudinal data presented are unique and have not been presented before. During this same time period, we have also witnessed the transition from the ‘private practice' model to the health systems care model. This research examines the willingness of family physicians to serve as preceptors amid medical organizational change. Physician resources have been stretched by increasing numbers of students and increasing demands on community-based offices for implementation of electronic medical records, demonstration of quality measures, and fulfillment of insurance requirements for payment. Therefore, identifying and recruiting preceptors to serve as teaching sites has become increasingly challenging in recent years. To investigate the question of whether the ongoing health system changes have affected student ratings of the preceptorship, medical
student opinions of the Family Medicine Preceptorship experience are reviewed.

Has the loss of practice ‘ownership’ and autonomy accompanied a change in the willingness of community physicians to participate in a medical school teaching program? Have student evaluations of the program changed over the recent decades? Can we continue to expect our local Family Physicians to find time for our medical students?

Methods

This is a time series analysis of preceptor ratings over more than 2 decades. The University of Minnesota Institutional Review Board has exempted from review studies of educational processes.

Following the conclusion of the Family Medicine preceptorship, each first-year medical student completes a written evaluation form. Completion of the evaluation form is required of all students, however the form itself is not graded. The information provided by the medical students is not shared directly with the local Family Physicians. Instead, it provides course faculty with valuable information on the student learning experience. During the study period, the class size at the Duluth regional campus ranged from 51 to 65 students.

This form includes a number of Likert scale items and space for individual comments. The same form was used throughout the study timeframe. Responses to the evaluation from the years 1993, 2014, 2015, 2016, and 2017 are analyzed and compared. Researchers selected 1993 as a base reference point from 25 years ago, a time prior to significant local health system changes. The 1993 data is compared with the most recent 4 years of student ratings. The 4 academic years of 2014-17 were selected to provide an optimal characterization of current student responses.

The authors have also examined rates at which the local Family Medicine doctors have agreed to participate. Rates from the years 1992, 2002, 2012, and 2017 are compared. These years were selected because they represent appropriate decade-long intervals and the most recent year to ascertain trends.

Local family physicians invited to serve as course preceptors include community physicians as well as residents in second and third years of their 3-year training. The Duluth Family Medicine Residency program remained at 10 residents per year until 2014 at which time it decreased to 8 residents per year. Nearly all of the local family medicine physicians are invited to precept, excepting those who have verbalized a strong desire not to do so. Records have been kept of the community physicians’ responses to this call for volunteers. All preceptors are unpaid by the medical school. Responses of ‘yes’, ‘no’, and the absence of a response were compiled.

Finally, physician practices were categorized by type. The practice was defined as ‘solo/small’ if it had fewer than 9 family physicians and was independent of a larger health network. Otherwise, the practice was categorized as a ‘system’. Additionally, the investigators defined a ‘system’ practice as having both a formal affiliation with a local hospital and having 2 or more primary care clinic sites that share the same affiliation name. Physicians who were still in residency were given a separate category, ‘residents’.

Results

Data on the student ratings of the Family Medicine Preceptorship Program activities are presented for student cohorts of 1993, 2014-17. The rating scales (1 = Never/Negative to 5 = Always/Positive) used over this period provide an absolute comparative figure for student perceptions and satisfaction. In all categories and years, the modal response was ‘5’. The response rate for students was 100% in all
years since the evaluation form was required.

Figure 1 illustrates that there has been no decrement in the student ratings of the Family Medicine preceptors’ performance as teachers over the years (Chi Square testing did not show any statistical difference in the rating categories over time). Preceptor performances continue to be highly lauded and perceived as presenting a realistic view of practice to their students. They are highly rated as clinical teachers.

Figure 1

As seen in Figure 2, the proportion of solicited Family Physicians in practice who have assented to be clinical preceptors in the community has diminished over the past 25 years. In 1992, 83.6% of physicians agreed to precept, but by 2017 only 47.9% did. The numbers of physicians solicited were 61 (1992), 75 (2002), 96 (2012), and 132 (2017). The increasing number of solicited physicians was due to several factors including the expanding student class size as well as diminishing proportion of favorable responses from physicians.

Resident physician responses were analyzed separately to ascertain if this cohort differed from the physicians in community practice. The decreasing trend was the same for both groups.

Figure 2

An added consideration, mentioned earlier, is the transformation of physicians’ practices over the past 25 years. In order to assess these changes, a retrospective analysis of practice type was performed. Preceptors were classified as being in a small/solo practice or in a practice which is a part of a healthcare system, or whether the preceptor was a resident in training at the time of serving as preceptor. The results of this analysis are shown in Figure 3.

Figure 3 demonstrates that the practice types in which the medical students train have changed markedly over the past 25 years. The proportion of preceptor physicians in solo/small practices has diminished (60.4% to 15.9%) while the proportion practicing in health ‘systems’ has increased significantly (8.5% to 61.9%). The proportion of resident physicians who engaged in preceptorship teaching has varied somewhat over the timespan (31.3% in 1992 to 22.2% in 2017).
Discussion

The standardized student evaluation data, collected within a single medical school course over several decades, are unique and have not been presented before to our knowledge.

Regardless of the practice site type to which the student is assigned, student evaluations are almost universally positive. Typical comments can be found in the 2015 assessment:

“ Seriously, she was incredible across the spectrum of assessment. I’ll probably continue to observe throughout the summer.”

“I really liked having Dr. A as my preceptor and am a little sad that the year is over.”

“The preceptorship was excellent! I was hopeful it would take place next year as well. Dr. R is a natural teacher and an enthusiastic physician.”

“Rating is 10 on a scale of 5! He was an amazing preceptor.”

“I thought this was a good match. Dr. N was very friendly and helpful. She was very open to my questions and let me gain hands-on experience whenever possible.”

The occasional comments of concern by students are followed up individually and privately to ascertain whether this was an anomalous comment or reflective of a more serious and permanent problem with the site, the preceptor, or the student.

As medical practice, specifically urban family medicine practice, has transformed from a private and physician-owned and directed model to a systems-based multi-specialty large organization model, the content of the office-based practice has also altered. Today, many fewer urban system-based family physicians deliver full-scope, broad spectrum medical services.

The attempt to link medical organizational changes over the past 25 years to the willingness of family physicians to serve as mentors with this program is data-driven and worthy of discussion. The data indicates that it is more difficult to get practicing physicians to serve as preceptors today when contrasted with 25 years ago. One of the reasons for the decrement in interest may be an indirect measure of practice satisfaction, ‘busy-ness’, etc. Reasons that physician preceptors chose to precept, or decline the opportunity, are not studied here. Future inquiry in this area could be informative.

Pressures on doctors’ time include declining reimbursement rates, decreasing duration of typical office visit, uninsured patients, and transitions to electronic health records. The effects of the Affordable Care Act are still emerging today, but it is clear that increasing the number of insurance covered individuals will lead to even more stresses on a system that is understaffed in primary care and family medicine.

Correspondingly, within the medical education framework, added pressures have increased on the community physicians who generously support student learning. Decades ago, community family physicians were asked to participate only in

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teaching of medical students. Today, there are a
great many more learners who desire the tutelage
of the community physician. Students in advanced
practice nursing, physician assistant programs,
premedical ‘prep’ programs, etc. all demand more
of the physician’s time than in the past.

Family physicians, by dint of their scarcity and
versatility, are particularly in demand for both their
clinical teaching skills and their ability to model
excellent care. How does this increasing demand
mesh with the demands of a busy practice? What
factors can support and sustain teaching excellence
going forward? This study did not assess all
parameters that could impact the physician’s
decision to teach (i.e. competing teaching demands
from other health professions, age or gender of
preceptor, etc.).

Given the declining number of physicians who
volunteer to teach medical students found in this
study, it is likely that more focused and concerted
efforts by the medical school to engage with
community physicians will be necessary. From the
medical school side of the equation, there is
increasing demand for structure and support of
community-based teaching. Clinical training sites
should be formally affiliated with specific
educational agreements. Training and compliance
with HIPAA regulations, non-existent some years
ago, now are necessary at both the medical school
and the clinical sites. While previous engagements
with community physicians were quite informal,
today’s health system and hospital regulations
need be formalized. What are the results of these
requirements?

Implications for Other Schools and Future
Directions.

Discussion of the elements that make the Duluth
Family Medicine preceptorship program successful
and sustainable should be of interest to schools
and regional campuses that are contemplating the
introduction or revision of current curricular
offerings. Additionally, the presence of this model
which has been sustained and strong for 40 years
can serve to assuage the concerns of academic
institutions that these efforts may be ‘risky’
ventures into which funding should be directed.

Student specialty choices are made earlier than in
the past, so it is imperative that good models and
information be given to students early enough to
enable continuity and reinforcement of their
interest in Family Medicine. As the fiscal and
human resources for new program development in
academia are limited, this cost-efficient model is
certainly worthy of study and emulation.

Future directions for this program include an
increasing emphasis on faculty development with
our community colleagues. Currently, all
preceptors are provided with a gratis subscription
to the online journal Teaching Physician, offered by
the Society of Teachers of Family Medicine (STFM).
Upwards of 40-plus hours of continuing medical
education (CME) credits may be earned through
Teaching Physician. Additionally, course faculty
continue to make site visits to each training site in
our community and explore new ways to offer
faculty development programming and support
physicians who have a talent for teaching.

The questions raised earlier are complex, and the
answers to many of these questions are multi-
dimensional and speculative at this point. It is
hoped that data-driven small studies such as this
will enable all of us to better design programs that
reinforce the interest in Family Medicine and
primary care in our students.

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