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PROJECT REPORT

The rural physician associate program: new directions in education for competency

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ABSTRACT

The Rural Physician Associate Program (RPAP) has 34 years experience in training 1097 medical students as independent distance learners in a 36 week, community-based continuity primary care experience. This program has been successful in preparing competitive students who select primary care residencies and return to rural practice. The RPAP program has been based on traditional apprentice-style clinical teaching with the support of computer-based resources to enhance distance learning. However while the clinical exposure and development of medical skills was strong, there were weaknesses in evidence-based medicine and managing healthcare, and inconsistencies in community or population health learning. New directions in the educational program for RPAP are described that have been or are being developed to address the competencies as outlined by the Accreditation Council on Graduate Medical Education. They include online and other resources, preceptor education and support, interactive journaling and cases, electronic portfolios, community projects, observed structured clinical exams and examinations. Ongoing challenges to competency-based education include developing meaningful measures and tools to assess competence for areas such as professionalism or systems-based practice; providing faculty development toward being able to practice, teach and evaluate students with an understanding of the competencies; and to build in ways of practicing, learning and improving care that involve effective teams of health-care professionals.

Key words: clinical competencies, educational outcomes, family medicine, medical education, medicine, primary care, rural.



Introduction

Established in 1971 to address the shortage of primary care physicians in greater Minnesota, USA, the Rural Physician Association Program (RPAP) is a 36-week, community-based elective available to 40 third-year medical students at the University of Minnesota. During the 9 months, RPAP students experience the lifestyle of rural physicians by living, learning and working in the community. Each student is sent to a different community. Spouses and children accompany the student. While on RPAP, participants evaluate and treat patients under supervision in the clinic, hospital, emergency room and extended care facilities; assist in surgery, and labor and delivery; consult with interdisciplinary health care professionals; serve as a resource to the community; and participate in educational activities during the year. These activities include a video-taped patient interview, formal case presentations, online rural medicine modules with online journal questions, online lectures, online interactive cases, and projects in evidence-based medicine and community health. Evaluation of the students' performance includes:

- ◆ review of submitted assignments
- ◆ evaluations by the preceptors on site
- ◆ evaluations by the visiting faculty
- ◆ a final observed structured clinical examination (OSCE)
- ◆ shelf examinations – national examinations of content within each specialty.

Since the inception of the RPAP, 1097 third-year medical students have participated. RPAP has touched virtually every corner of Minnesota with 107 teaching sites. Approximately 65% of the RPAP students return to practice in Minnesota, 60% locate in rural communities, and 80% are in primary care practices.

Students spend an average of 59 hours per week in the hospital and clinic, and see approximately 75 patients per week (77% outpatients) with an excellent distribution of age,

gender and diagnoses based on student surveys and patient logs. The average student first assists on 150 procedures, delivers 26 babies and reports 32 hours of direct teaching contact weekly with their preceptors. When comparing average scores with those of their peers doing traditional rotations over the past several years, RPAP students do as well on National Board examinations and the Primary Care clerkship OSCE. RPAP students have historically been sought after by residency programs, based on verbal reports of regional program directors and recent survey information indicating that 72% of RPAP students matched with their first choice of residency program, and 83% of matched residents were very satisfied with the match.

The Need for educational improvement

The design of the program has changed very little over 34 years. While computer technology to support education has been used since 1984, the teaching has been primarily apprentice-style clinical exposure. During the 36 weeks of RPAP, it is possible to complete 24 weeks of required credits, depending on the RPAP site's ability to meet the requirements of the courses. These credits include primary care clerkship, surgery, obstetrics and gynecology, pediatrics, orthopedics, and urology. Adequate clinical exposure in most of these areas has not been a problem, based on shelf examination results and patient logs. In primary care, however, early student performance in the OSCE demonstrated weakness in evidence-based medicine and health-care management—topics that were covered in the traditional lectures on campus.

During the 9 months, RPAP faculty makes two on-site visits to evaluate the communication skills of each student. At the first visit, a patient history is video-taped and reviewed with the student. The final communication session visit is spent observing the student during the clinic day, communicating with patients, staff and preceptors while providing care. Four specialty faculty visits including RPAP faculty and a University faculty member from family medicine, pediatrics, obstetrics and gynecology, medicine or surgery are



conducted with small groups of RPAP students. During these visits, the students formally present a case for education and discussion, and the host student gives a formal educational presentation to the community physicians. Evaluation forms are completed at the end of each visit by RPAP and specialty faculty.

Grades for the RPAP experience have been based almost entirely on the written evaluations performed periodically by their community preceptors. In recent years, shelf examinations for the required courses were instituted at the end of those course periods and a primary care OSCE was given at the end of RPAP. The primary care clerkship also required an evidence-based medicine project, and that students also completed and reported on a community project, usually in public health education.

One of the challenges in academic medicine today is how to teach and evaluate competencies including patient-centered care, evidence-based medicine, professionalism, communication skills, practice-based learning and improvement, and systems-based practice. While the ingredients for learning these competencies have been part of the program, there was a need to develop a framework and resources to assure consistent learning, to create more effective interactive learning experiences, and to develop better evaluation tools to assess achievement of competency.

Teaching and evaluating competencies

Changes have been made in the curriculum and evaluation of the RPAP experience regarding teaching and learning the following six general competencies of the Accreditation Council for Graduate Medical Education (ACGME)¹.

1. Patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.
 - a. One strength of this 36 week program is that the students receive an in-depth view of true continuity of care, and an

appreciation of the value and depth of physician–patient relationships. This is often reflected in the essay written at the conclusion of their experience.

- b. Online modules specific to rural health issues (including culture, health systems, population health problems, and barriers to medical services) were created with online journal questions to engage the students to apply their learning and seek answers unique to the aspects of their site.
- c. A Community Health Assessment (CHA) project is required that includes defining the community and reviewing available population health statistics². Students are advised to consider the potential community health impact, and the important stakeholders to involve for effective health improvement.
- d. Internet linkages are provided on the learning website to resources such as practice guidelines, national government health resources, health promotion sites, and statewide/county health data.
- e. The OSCE includes simulated patient or other clinical experiences that assess the students' competency in providing effective care.

2. Medical knowledge about established and evolving biomedical, clinical, and cognate sciences, and the application of this knowledge to patient care.

- a. Teaching by preceptors and University faculty is encouraged to be evidence based and related directly to patient care. Guidelines for evidence based teaching are being developed for faculty and preceptors.
- b. A biomedical library teaching resource was developed as a booklet and as an



- online slide presentation to help students perform appropriate literature searches.
 - c. A link to the university biomedical library and an additional RPAP online library is available at the learning website with published and internet resources organized for quick access.
 - d. National shelf exams are used to assess knowledge in several areas. Patient logs are being revised as a checklist of the expected diagnoses and procedures needed during the 36 weeks.
3. Practice-based learning and improvement that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvement in patient care.
 - a. An online module on managing care was created. It included journal questions about preceptor and site participation in quality improvement projects, and outcomes measurement and reporting.
 - b. An evidence-based medicine (EBM) project is required in which the student asks a well-designed clinical question, performs a literature search, critically evaluates the literature, writes a comprehensive report and produces a patient education brochure.
 - c. Internet linkages are provided to resources such as practice guidelines, technology assessments, and other quality improvement resources.
 - d. Students directly participate in RPAP site projects and committees that address quality improvement.
 - e. EBM projects are evaluated for competency in critical appraisal and application to patient care.
 - f. Patient satisfaction surveys will be developed for the students.
4. Interpersonal and communication skills that result in effective information exchange and teaming with patients, their families, and other health professionals.
 - a. Communication sessions are videotaped and observed, with a redesigned evaluation form based on the Macy Initiative in Health Communications³. This includes communication with physicians as well as patients.
 - b. Formal case presentation skills and professional presentation skills are evaluated during the Specialty Faculty visits. Peer evaluations will be added.
 - c. Patient education brochures or other educational media are created by students in the EBM project and CHA project
 - d. Other health professions' students and faculty are being incorporated into the Specialty Faculty visits and CHA projects to develop effective teamwork.
 - e. The OSCE includes specific evaluation of communication skills.
5. Professionalism, as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
 - a. A healthcare ethics module is in development with interactive cases.
 - b. The CHA project involves professional community engagement and assessment of the needs of the community.
 - c. Student electronic portfolios are being developed that will include evidence of the professional work accomplished during RPAP.
 - d. Professionalism is evaluated specifically by the RPAP preceptors using global assessment forms.



- e. Systems-based practice, as manifested by actions that demonstrate an awareness of, and responsiveness to, the larger context and system of health care, and by the ability to effectively call on system resources to provide care that is of optimal value.
6. An online module addresses managing health care and understanding systems. Interactive online cases are being developed.
- a. RPAP students follow patients throughout the community system: clinic, hospital, emergency room, nursing home, hospice, schools and businesses, and are more aware than traditional students of the relationships and impact on patient care. New Specialty Faculty visits are being designed to review community systems cases where the emphasis is on understanding and evaluating the performance of the system, rather than the experience and outcome of an individual patient.
 - b. The CHA involves assessment of the larger context of care and the use of, or improvement of, systems to improve health or the effectiveness of health care.
 - c. Students participate with preceptors in meetings and discussions about the business and practice of providing care for individuals and a community.
 - d. CHA projects are evaluated for the understanding of systems and the development of a practical strategy to produce change or improvement.

Future challenges in competency-based education

One of the biggest challenges is to develop meaningful measures and tools to assess competence for areas such as professionalism or systems-based practice. Global rating forms have been the standard and most commonly used evaluation tool. These may not be appropriate or adequate for assessing the six competencies⁴. Further development, experience and testing of new tools are necessary. The tools have to reflect an understanding of what is being measured. The RPAP students take the same OSCE as traditional students. Although, anecdotally, the simulated patients and some of the staff have noted a difference in the RPAP students that is described as “more competent”, “more confident”, or as a level of comfort expressed as “I’d like to have him/her for my doctor”, there has been no demonstrated difference in the evaluation measures. The challenge is to discern if there is no difference, or if the tools are not designed to find a difference.

Another challenge is how to provide faculty development through education and mentoring toward the ACGME competencies. This includes being able to practice, teach and evaluate students with an understanding of the competencies and with an appropriate expectation of proficiency and improvement over time. This challenge is amplified when the program faculty is made up of physicians practicing full-time in as many communities as there are students.

The community-based model for RPAP has the distinct advantages of experiencing continuity of care, mentoring in aspects of professionalism and communication, and understanding of systems and of the impact of healthcare services on a population. There are disadvantages that include variations in information technology, medical technology, complexity or competitiveness of systems, and expertise in practice improvement. While these variations are often of educational value when discussed in a group setting, they can be challenging for an individual student.



The RPAP students begin their experience by meeting many individuals involved in medical care, including administrators, clinic managers, physician assistants, physical and occupational therapists, behavioral therapists, pharmacists, dentists, and parish nurses. The challenge is to build in ways of practicing, learning and improving care that involve teams of healthcare professionals. Through the CHA projects and other community health initiatives, RPAP is helping to develop community-based interprofessional health or healthcare systems improvement projects or practices. These efforts will hopefully continue to provide challenging learning opportunities that are also of benefit to the community.

Conclusion

The new direction for RPAP is to continue to enhance and evaluate the learning of our students as outlined by the ACGME competencies through online and other resources, preceptor education and support, interactive journaling and electronic portfolios, community projects, OSCEs and examinations. RPAP students describe the OSCE experience as “just another day in the clinic”. In the future, they may be just as familiar with and confident about quality improvement processes, health promotion projects, clinic or hospital systems evaluations, and ethical decision-making.

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