



Interprofessional Primary Care Course Curriculum and Evaluation

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BACKGROUND AND OBJECTIVES: Primary care (PC) requires interprofessional teamwork and training. Although clinical training in PC settings is well developed in some professions, classroom teaching on the principles and practice of PC provides additional opportunities for interprofessional education.

METHODS: We offered an elective one-credit classroom course on PC over 3 years, 2013 through 2015, enrolling students from dentistry, medicine, nursing, pharmacy, physician assistant, public health, social work, and other fields. Course activities included classroom presentations, small group discussions, team exercises, written reflections, online discussion, and observation visits to PC practices. We conducted an anonymous postcourse evaluation using 5-point Likert-like scales and brief student comments.

RESULTS: Eighty-four students completed the course over 3 years and 86% (72) completed the evaluation. Students rated the course high value or very high value, particularly for interprofessional student mix (99%, 71) and practice visit (99%, 70/71). Most students (98%, 65/66), felt the course should be offered again, and 82% (54/66) thought it should be expanded. Most students (93%, 65/70), recommended the course for others, and 41.1% (29/70) felt it should be required for students in their field or for all health professions students. After completing the course, 83.3% (60/72) of students planned careers in PC settings, and 55.6% (40/72) reported they changed plans to such careers.

CONCLUSIONS: The PC course served students across health professions, earned high ratings, and influenced PC career plans. Most students felt the course should be recommended or required for all health professions students.

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Interprofessional health care teams are essential for effective primary care practice and training.¹⁻³ Medicine,⁴ nursing, and physician assistants have developed clinical primary care (PC) training programs,⁵ but other important

members of PC teams have limited opportunities for PC training. Few programs teach the principles of PC and the role of PC in the health of individuals and populations.⁶ Interprofessional classroom learning can enhance understanding of PC across

professional groups and build a shared foundation for practice, scholarship, advocacy, and leadership.^{7,8}

We created a novel interprofessional classroom course in PC and describe here the content, educational methods, evaluation, and student recommendations for further development.

Methods

The department of family medicine offered the primary care course (PCC) to all graduate and professional students as a 12-week, one-credit ungraded course. Class size of 25 to 30 accommodated approximately four students from each of seven groups: dentistry, medicine, nursing, pharmacy, physician assistants, public health, and social work.

We recruited students from across the health sciences campus and broader university using personal contact with program advisors, posters, and a website advertising:

This unique interprofessional course focuses on primary care, the foundation of medicine and the cornerstone of health care reform. Discusses clinical, training, workforce, delivery, quality and policy. Describes the role of primary care in personal and population health.

From the Department of Family Medicine, University of Washington.

Explores care teams and the Patient-Centered Medical Home. Includes presentations, discussion and practice visits. All professional and graduate students welcome!

The course was not a typical survey course, but presented PC as a unified domain of scientific knowledge and professional expertise. To model three key principles of primary care—generalism, comprehensiveness, and continuity—all sessions were led by one instructor (WRP).

Curriculum content is outlined in Table 1. Topic modules included class presentations, readings, and discussion questions. Class sessions involved problem-solving exercises

for small groups mixing students from each profession.

Each student made a half-day practice visit to observe a PC clinician (most family physicians) seeing patients. We provided nonclinical students materials to help prepare for their first patient care experience. All students completed Health Insurance Portability and Accountability Act training. Clinicians used their established patient consent procedures. The study was exempted by the University of Washington Institutional Review Board.

We conducted an anonymous web-based evaluation survey. Students rated satisfaction on a 5-point Likert-like scale: 1-Very Low Value,

2-Low Value, 3-OK Value, 4-High Value, 5-Very High Value, or No Opinion. Some questions asked for True or False responses, short comments, or recommendations for improvement.

Results

Eighty-four students completed the PC course over 3 years 2013 through 2015, with 64% (54) women, representing each health profession and ranging from undergraduates to postdoctoral trainees (Table 2). Student academic level ranged from undergraduate (3, 3.6%) to master's degree (24, 28.6%), professional doctorate (41, 48.8%), PhD (3, 3.6%) and postdoctoral trainee (4, 4.7%).

Table 1: Primary Care Course Curriculum Outline

Organizing Themes	
	<ul style="list-style-type: none"> Starting from common ground—The US health care system is a shared catastrophe. Primary care is a team sport. It takes a village to provide primary care. PC provides most of the care to most of the people for most of their problems most of the time.
Definition of PC	IOM, Alma Atta Declaration, WHO Primary Health Care What PC is not
Principles of PC	Comprehensive, Continuity, Community, Context Whole person care
Populations served by PC	Underserved, Vulnerable, Urban and Rural
Clinical content of PC	Acute, chronic, prevention, mental health Specialize in common problems vs diagnoses Multiple problems and patients at one visit
Comprehensive Care	Cradle to grave, family care, coordination of care Patient-centered care Relationship-centered care
PC and the health of <ul style="list-style-type: none"> the people the individual 	Access, quality, outcomes, patient experience, cost International, US national and regional evidence Triple Aim, Quadruple Aim
PC clinicians	Training, scope of practice, options for focus
PC delivery models	Integrated health care systems Chronic Care Model Patient-Centered Medical Home
Teamwork in PC	Patient as team member Roles in teams: DDS, MD/DO, PA, RN, NP, PharmD, PH, MSW Complementary relationships with other specialists
PC in context	Values of generalism and specialism Inverse Care Law, Primary Care Paradox
PC research	Practice-based research networks Community-based participatory research Ecology of medical care
Future of PC	PC in the US health care system Challenges facing primary care Health care reform - Future models of health care

Table 2: Student Profession, Training Program and Characteristics in Primary Care Course

		Students			
		Course Year 2013	Course Year 2014	Course Year 2015	Total
Total students		24 28.6%	31 36.9%	29 34.5%	84 100%
Academic Unit	Degree Programs				
School of dentistry	DDS MSD-Pediatric Dentistry	5	0	2	7 8.3%
School of medicine	MD, MD/MPH, MD/PhD	6	5	5	16 19.0%
School of nursing	BSN, MN, PhD DNP-Nurse Practitioner DNP-Nurse Specialist Nurse Midwifery	1	6	4	11 13.1%
School of pharmacy	PharmD	2	6	6	14 16.7%
Physician assistant program	PA, BCHS, MCHS (Clinical Health Services)	0	5	4	9 10.7%
School of public health	MPH, PhD MHA – Hospital Admin.	7	5 1	3 1	17 20.2%
School of social work	MSW, MSW/MPH	3	2	3	8 9.5%
Others	Business – MBA Post-BS Global Health	0	1	1	2 2.4%
Student Level					
Bachelor degree		0	2	1	3 3.6%
Physician assistant		0	5	4	9 10.7%
Master's degree		9	8	7	24 28.6%
Professional doctorate		10	15	16	41 48.8%
PhD		1	1	1	3 3.6%
Postdoctoral		4	0	0	4 4.7%
Gender					
Women		17	17	20	54 64.3%
Men		7	14	9	30 35.7%
Total		24 28.6%	31 36.9%	29 34.5%	84 100%

Physician assistant students (9, 10.7%) can be in bachelor's or master's degree programs.

All students in clinical professional programs (65, 77.4%), regardless of their level of training, had substantial patient care experience

prior to the course, although often no exposure to primary care settings. Most students from the nonclinical programs of public health, business, and global health (19, 22.6%) had no prior clinical experience.

The evaluation survey achieved an 86% response rate (72/84) over 3 years (ranging from 83% to 90%) and across professional groups (ranging from 75% (6/8) for MSW to 100% (7/7) for dentistry (Table 3).

Table 3: Student Evaluation of Primary Care Course Over 3 Years

Course Activities and Materials How valuable was ... ? (N=72)*	Percent of Respondents Rating Activity [‡] HV-High Value or VH-Very High Value	
	Interprofessional mix of students	HV 10 VH 61
In-class discussions	HV 21 VH 42	88% 63/72
Student online discussion	HV 24 VH 10	47% 34/72
Instructor presentations	HV 29 VH 34	88% 63/72
Practice visit and observation	HV 16 VH 54	99% 70/71*
Course website	HV 23 VH 27	69% 50/72
Course readings	HV 33 VH 4	51% 37/72
I wish we could have spent more time on activity ... (N = 70)*	Percent (Number) Responding Yes	
Instructor's case stories	67% (47/70)	
Full class discussion	43% (30/70)	
Small group discussion	40% (28/70)	
Lectures/presentations	29% (20/70)	

* 84 students completed the course, 72 (85.7%) students responded to survey. Number of students responding varied slightly by question. One student did not make a practice observation.

‡ Rated on 5-point scale: 1-Very Low Value, 2-Low Value, 3-OK Value, 4-High Value, 5-Very High Value.

Students rated all course activities as 4-High Value or 5-Very High Value on the 5-point scale. Student comments highlight their positive assessments (Table 4).

Almost all students (99%, 71/72), valued the interprofessional student mix. Students also valued class discussions (88%, 63/72), with equal numbers preferring small group vs whole class discussions.

For most students (99%, 70/71), the practice observation visit was the highlight of the course. Many described it as “a life changing experience.” Discussions returned again and again to examples students shared from their practice visits. In just a brief visit, students saw moving evidence of the principles of PC at work with real patients, problems, and professionals. Students immediately appreciated the depth and breadth of PC and the value of continuing patient-clinician relationships. They saw PC teams at work,

witnessed joys of patient care, and felt frustrations with the health care system.

We asked students: “Did the PC course influence your interest in working in a PC setting in your career?” Fully 83.3% (60/72) reported they were interested in careers in PC, and 55.6% (40/72) reported the course increased that interest, including students in each professional group. Another 27.8% (20/72) had planned PC careers before the course (Table 5).

Almost all students, 98% (65/66), recommended we offer the course again, and 82% (54/66) felt it should be expanded by adding more class time and credits, an in-depth seminar or survey course with variety of topics and speakers (Table 6). Most students (93%, 65/70), recommended the course for other students, and 41.4% (29/70) felt it should be required for students in their own

professional field or for all health professions students.

Discussion

Our new PC course attracted a rich mix of health professions trainees and earned very high evaluation scores. Students most valued the interprofessional discussions and seeing PC clinicians care for patients. The experience recruited many students to PC careers. They recommended the course be offered or required for trainees in all health professions.

To our knowledge, this is the first such course described. It clearly filled needs felt by students who see futures in PC practice but worry their siloed training does not offer the information, experience, and perspectives they need. Our course evaluation achieved a high response rate over 3 years and demonstrated high scores from students across health professions schools.

Table 4: Student Comments From Anonymous Course Evaluation Survey

Evaluation Survey Item
Verbatim Student Comments
Overall course evaluation “Thank you for taking the time to show us about primary care. This course was truly the most interesting and enlightening course that I have taken during my professional school career.” – PharmD student, 2015
Interprofessional student mix “This was a great and interesting course! I especially loved that it was an inter-disciplinary group. I wish we had more classes like this in all of our programs.” – Nursing trainee, 2015
Class discussions “This course was just amazing and a breath of fresh air from my usual core class work. It was nice to come in and discuss about the world and profession that is primary care. There is a special, unique quality of this class that will make it one of my memorable classes here at the UW.” – PharmD student, 2014
Practice observation visit “If I hadn’t seen it, I never would’ve believed it.” – PharmD student, 2013.
Instructor presentations “Wonderful course overall... Thank you for sharing your stories with us as a class and teaching us strong values and pillars for primary care.” - MD student, 2015 “[The instructor] led us on a journey through many realms related to primary care. He had a profound influence on my relationship to PC. I so appreciated his personal stories... I learned a lot.” – PA student, 2015
Impact of course on interest in working in a PC setting in your career “Before this class I was much more interested in having a specialty rather than primary care. However, after attending this class, I became much more fascinated by primary care and especially the interaction that I could have with my patients in practice.” – MD/MPH student, 2014
Course should be required for all health professions students “This was a fantastic class and I am so glad I took it. I hope that all students in the healthcare professions are able to participate and learn in the way that I did.” – Nursing trainee, 2014 “I think, as an institution focused on Primary Care, it is shocking that this course is not mandatory. Anyone in the health sciences should be required to take this.” – Nursing trainee, 2015

Comments from 72 students 2013-2015, responding to anonymous course evaluation survey. Students were identified only by professional group and course year.

Table 5: Influence of the Primary Care Course on Student Interest in a Primary Care Career

Did the PC course influence your interest in working in a PC setting in your career?	Students % (Number)
More interested in PC career - total	55.6% (40)
– somewhat more interested	29.2% (21)
– much more interested in PC	26.4% (19)
No change—I already planned a PC career.	27.8% (20)
No change in plans	16.7% (12)
Considering PC career after course	83.3% (60) (40+20)
Total	100% (72)

N=72. Of 84 total students, (85.7%, 72/84) responded to this question.

“More interested in PC career–total” includes the sum of students somewhat more and very much more interested in PC careers.

“Considering PC career after course” includes sum of students more interested and students already considering PC careers.

Still, our experience is limited, coming from one institution with a strong PC orientation. Students were self-selected and cannot represent all students. Student plans for careers in PC settings may change over time.

The course was largely developed and taught by one instructor to model a generalist perspective, comprehensive view of PC, and continuity of teacher-class relationship. We built on a family medicine orientation to

PC and matched most students with family physicians. Broader involvement of PC perspectives could enrich course content, teaching methods, and student experiences.^{3,5}

Table 6: Student Recommendations for Primary Care Course

Would you recommend course to other students? (N=70)*	
Student Recommendation	Percent (Number) Responding Yes
Recommend to other students	93% (65/70)
Recommend to all students	59% (41/70)
Should be a required course	41% (29/70)
• Require for all students in my field	10% (7/70)
• Require for all health professions students	31% (22/70)
Recommendation for Future of PC Course (N=66)*	
Offer course again	98% (65/66)
Expand classes, time and credits	82% (54/66)
Add a seminar course for in-depth study	58% (38/66)
Add a survey course with variety of topics and speakers	58% (38/66)

*N=84 students completed the course, 72 students responded to survey. Number of students responding varied slightly by question.

Students could make multiple recommendations.

We encourage others to develop classroom courses and other interdisciplinary training opportunities in PC. Opportunities should be expanded to include seminar courses for deeper study of critical issues and survey courses to offer a broader variety of perspectives, clinicians, and topics. We are currently studying the longer-term impacts of this course on student knowledge and attitudes regarding PC and on career trajectory. Future studies should examine student outcomes in career choice, practice location, and outcomes of care.^{7,9}

Conclusions

The PC course served students across health professions, earned high ratings, and influenced PC career plans. Students across health professions thirst for insight into PC. Many see their professional futures in PC, but know their training programs fall short in curriculum or expertise to inform their professional growth. Students also hunger for opportunities to learn with their colleagues in other professions. Courses that fill these needs can help meet our critical need for PC workforce, improve the function of clinical teams and improve understanding

of PC throughout health care systems. Professionals with this training, experience, and perspective can contribute to improving individual and population health across our diverse communities.

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