An Innovative Course for the Clinical Years: A Look Back at the Last Decade

Cynthia Kay, MD, MS; Leslie Ruffalo, PhD, MS; Marika I. Wrzosek, MD; Carley Sauter, MD; Ashley Pavlic, MD, MA; Mary Ann Gilligan, MD, MPH; Kathleen Beckmann, MD; Svetlana Melamed, MD

Background: In the traditional 4-year medical school model, the final 2 years are the clinical years. These years bear challenges and experiences distinct from the preclinical part of medical school.

Methods: We implemented a longitudinal, multifaceted, 2-year course involving advising, Objective Structured Clinical Examination, and discussions to help students at a private, Midwestern medical school navigate the clinical years, ensure graduation competencies are met, and prepare for residency. Participants were third- and fourth-year medical students from 2013 to 2022. The course, titled "Continuous Professional Development," was run by a core group of faculty representing a variety of specialties.

Results: At the end of each academic year, students completed evaluations on the components of the course and the course as a whole. Feedback was generally positive, with students rating the one-on-one advising and short sessions related to clerkship and residency transitions particularly beneficial.

Conclusions: Students value educational content specifically tailored to their clinical experience. While having a single course responsible for multiple programs and sessions appears to be uncommon for undergraduate medical education, our course shows that it is possible and can be done effectively with a relatively small cohort of faculty.

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Author Affiliations: Dept of Medicine, Clement J. Zablocki VA Medical Center and Medical College of Wisconsin (MCW), Milwaukee, Wisconsin (Kay); Dept of Family and Community Medicine, MCW, Milwaukee, Wisconsin (Ruffalo); Dept of Psychiatry and Behavioral Health, MCW, Milwaukee, Wisconsin (Wrzosek); Dept of Physical Medicine and Rehabilitation, MCW, Milwaukee, Wisconsin (Sauter); Dept of Emergency Medicine, MCW, Milwaukee, Wisconsin (Pavlic); Dept of Medicine, MCW, Milwaukee, Wisconsin (Gilligan); Dept of Pediatrics, MCW, Milwaukee, Wisconsin (Beckmann); Dept of Pediatrics, Children's Minnesota, Minneapolis, Minnesota (Melamed).

Corresponding Author: Cynthia Kay, MD, MS, Department of Medicine, Clement J. Zablocki VA Medical Center and Medical College of Wisconsin, 5000 W National Ave, Milwaukee, WI; email ckay@mcw.edu; ORCID ID 0000-0003-2649-6078

BACKGROUND

The traditional 4-year medical school model in the United States is comprised of 2 preclinical years followed by 2 clinical years. The preclinical years are centered on the foundational sciences and basic doctoring skills.[1] The clinical years, which include clerkships, electives, and acting internships, are focused on direct patient experiences. It is during the clinical years that students generally decide upon a specialty.

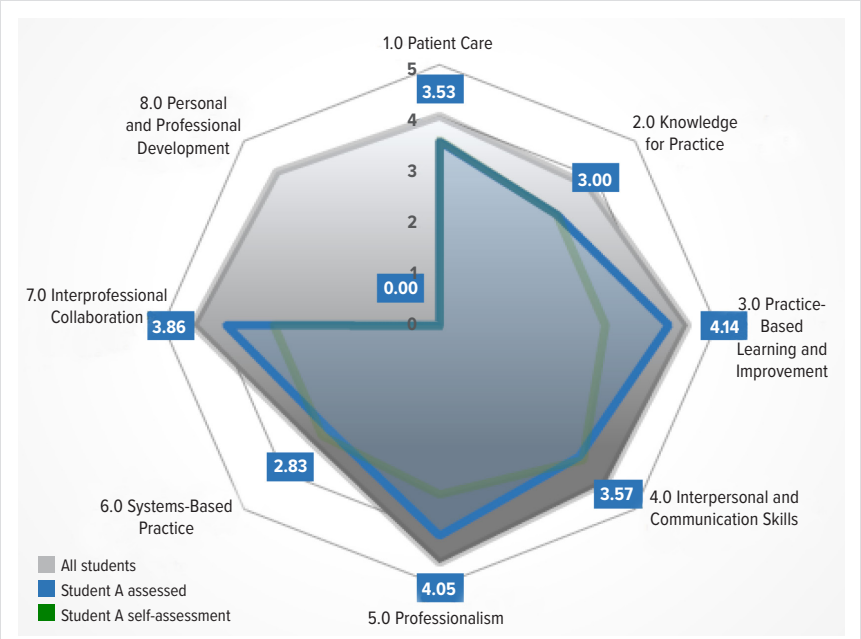
While some aspects of the preclinical years extend into the clinical years, such as standardized testing, numerous unfamiliar responsibilities arise. Inherently, the clinical years present unique challenges and distinct pressures when compared to the preclinical years.[2,3] As such, students need to learn how to balance newly imposed and frequently shifting clinical responsibilities, including duties to patients and other members of the health care team, on top of academic obligations, personal life, and career planning. This new clinical environment can lead to feelings of uncertainty and insecurity.[4] For many, the clinical years are also the first time students are integral parts of the health care team. Their actions have real and direct effects on patients, staff, and colleagues. Coping and processing these experiences while maintaining professionalism and empathy can be complicated and warrants dedicated curricular attention.[5,6]

Navigating the clinical years and the path towards a specialty can be confusing and stressful. In fact, the Liaison Committee on Medical Education (LCME) includes both academic and career advising as 1 of the 12 accreditation standards of medical schools.[7] While the type and structure of programs varies by institution, students generally find their purpose beneficial.[8]

At the Medical College of Wisconsin (MCW), a private allo-

pathic medical school in the Midwest with 3 campuses throughout Wisconsin, the Continuous Professional Development (CPD) course was created to assist and support students through these critical clinical years. The purpose of this paper is to describe the evolution, delivery, and feasibility of the CPD course.

Figure 1. Medical College of Wisconsin Global Competencies Labeled Numerically



METHODS

Course Description

The CPD course was launched in July of academic year (AY) 2013-2014 and has run continuously since. It is required for both third- and fourth-year medical students, and the course's overall goal is to ensure students meet MCW's 8 global competency milestones necessary for graduation that align with the Association of American Medical Colleges competencies[9] (Figure 1). The course consists of several required components described in more detail below: individual student advising, Observed Structured Clinical Examinations (OSCEs), the administration of 4 "mini courses," and residency matching preparation through mock interviews. The course is graded as satisfactory/unsatisfactory, which is determined by attendance at mandatory sessions and completion of assignments. Each class has 215 to 225 students.

Individual Student Advising

Individual advising is a core aspect of the course to oversee students' progress. Each rising third-year student is assigned a CPD advisor, who is one of the course's 8 directors. CPD advisors have access to student's academic transcripts, clerkship evaluations, National Board of Medical Examiners (NBME) scores, and OSCE performances. Additionally, CPD advisors are provided with a graph that displays the student's competency progression on each of MCW's 8 global competencies (Figure 1). The graph shows 3 aspects of the student's competency data: (1) actual competency data as generated by attending physicians, preceptors, and residents who are clinically evaluating the students; (2) the class average on each competency; and (3) the student's self-reported score on each competency. Students are rated on a scale of 1 to 5, with 5 being fully competent for that specific competency. Data generated from clinical evaluations are updated with the completion of major clerkships (anesthesia, family medicine, internal medicine, obstetrics/gynecology [OB-GYN], pediatrics, psychiatry, and surgery). Students self-report their score twice a year, before meeting with their advisor. CPD advisors show students the generated graphs and use these data to normalize the students' experiences by highlighting their strengths, areas for improvement, how they compare to the rest of the class, and how they perceive themselves.

Each CPD director advises 60 to 70 third- and fourth-year medical students during the academic year. At minimum, advisors meet with their third-year medical students (30-35 students) once a semester for 20 to 30 minutes to review exam scores, clerkship evaluations, OSCE reports, and the competency graph and to help plan and navigate the residency application process. Additionally, students may bring up concerns with their advisor. Advisor preparation and material review per student meeting amounts to 30 to 60 minutes. Extra meetings are held at the request of either students or advisors. The semiannual meetings allow advisors to address student concerns, ensure that students are meeting core competencies, and are on track to fulfill graduation requirements.

OSCE Program

During the clinical years at our institution, the OSCE program is overseen by the CPD course directors, whose responsibilities include the development, administration, and grading of OSCEs throughout the third year. Students complete three 3-station OSCEs during their third year: Super OSCE A—Surgery, OB-GYN, and Anesthesiology; Super OSCE B—Family Medicine, Pediatrics, and Psychiatry; and Internal Medicine OSCE. The OSCE cases are administered at our institution's simulation center utilizing standardized patients who grade students on history, physical examination, and communication skill. The CPD directors grade student documentation of history, physical exam, differential diagnosis, and diagnostic management plan using a rubric.

Mini Courses

The CPD course also includes 4 week-long "mini courses"

throughout the third and fourth years. These sessions include a variety of topics in medicine, professionalism, and career planning not otherwise covered formally in the curriculum. The courses run for a week each at 4 time points during the clinical years and span from the end of second year to just before medical school graduation.

Transition to Clerkship, the first mini course, presents a series of interactive workshops to prepare students for their clerkship experiences. Typical topics include a clerkship directors panel, microaggressions and macroaggressions, social media use (as a medical student), opioid use, writing case reports, academic success, and the clinical learning environment. Winter Intersession occurs midway through the third year after students have completed several clinical rotations and, thus, have some clinical experiences to connect to course material. Common topics covered include academic support, psychological safety, ethics, electronic communication, mindfulness, gallows humor, resilience, narrative writing, and the residency application process. The third mini course is Summer Intersession, which runs between the end of the third year and start of the fourth year. Here, the focus shifts to residency applications and more advanced clinical topics. The director of Student Career Services covers areas related to the Electronic Residency Application Service (ERAS), letters of recommendations, and curriculum vitae preparation. Other sessions include writing a personal statement, a residency panel, breaking bad news, reducing stigma in the treatment of opioid misuse, and working with vulnerable populations (eg, veterans and lesbian, gay, bisexual, transgender, queer/questioning [LGBTQ+]). The final mini course is Transition to Residency, which focuses on topics pertaining to professionalism and clinical scenarios relevant to incoming interns, as this course is held during April/May of the students' graduating year.

Topics are determined by input from all stakeholders: CPD faculty, undergraduate medical education (UME) leadership, clerkship directors, and students. Most importantly, competencies not covered elsewhere are addressed through these mini courses.

With the emergence of the COVID-19 pandemic, all mini courses were adjusted to permit virtual content delivery. Additionally, teaching methods were expanded to include reflection, asynchronous, and dynamic learning. Table 1 provides a complete list of topics for all 4 mini courses.

Table 1. Topics Covered in the Mini Courses

Transition to Clerkship	Transition to Residency
• Clerkship director panel	• Cross cover curriculum
• Micro- and macroaggressions	• Chief resident panel
• Social media use	• Health equity/social determinants of health
• Opioid use	• Radiology for interns
• Writing case reports	• Neurology for interns
• Academic success	• Infectious disease for interns
• Clinical learning environment	• Acid/base
Winter Intersession	• Geriatrics
• Academic support	• Shock
• Psychological safety	• Ethics
• Ethics	• Ophthalmology
• Electronic communication	• Hepatology
• Mindfulness	• Delirium and psychosis
• Gallows humor	• 1-minute preceptor and feedback
• Resilience	• LCME and Graduation
• Narrative writing	• Medical Examining board
• Residency application process	• Specialty breakout sessions
Summer Intersession	
• ERAS	
• Letters of recommendations	
• Curriculum vitae	
• Personal statement	
• Residency panel	
• Breaking bad news	
• Reducing stigma in opioid misuse treatment	
• Vulnerable populations	

Abbreviations: ERAS, Elcetronic Residency Application Service; LCME, Liaison Committee on Medical Education

Mock Interviews and Supplemental Offer and Acceptance Program

Lastly, the CPD course seeks to provide students with necessary tools for residency recruitment via mock interviews. The CPD course coordinator, with assistance from the CPD directors, recruits faculty and conducts a "match-making" activity, whereby students get to participate in a simulated residency interview with a faculty member from the student's intended specialty. The students are given immediate feedback regarding their interviewing strengths and weaknesses, along with the faculty member's assessment of the student's competitiveness in their desired specialty. Recommendations are made for those students who may benefit from additional support in interview skills. The CPD advisors also provide background and guidance for students who participate in the Supplemental Offer and Acceptance Program (SOAP). On SOAP day, CPD advisors are paired with a student either in person or virtually. They provide emotional support and help students through the process as they develop a plan for the week.

Course Logistics

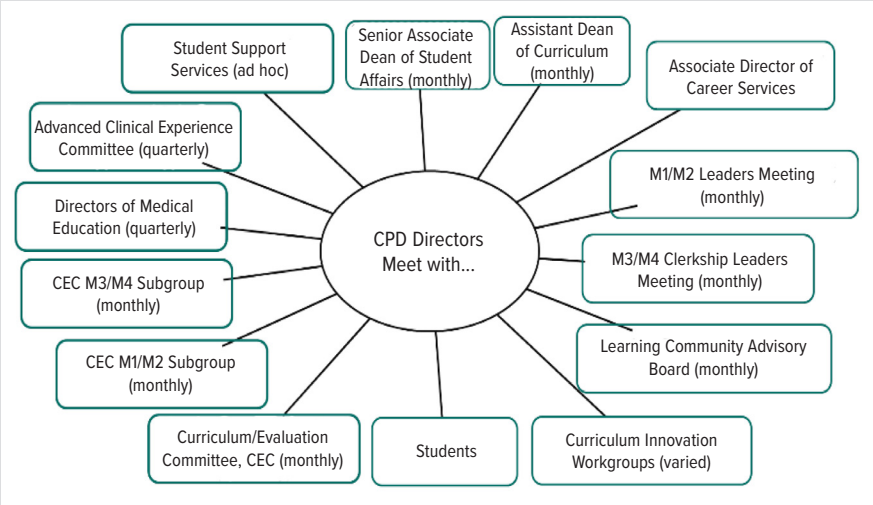
Originally, the CPD course was led by 4 full-time faculty co-directors representing a range of specialties (pediatrics-emergency medicine, OB-GYN, internal medicine, and family medicine) and who each was allocated 0.25 full-time equivalent (FTE). In July of AY 2021-22, course leadership was expanded to 8, in order to more effectively implement and grow all aspects of the coures. Each was allotted 0.25 FTE and continued to represent a range of specialties, including the addition of physical medicine and rehabilitation, psychiatry, pediatrics, and emergency medicine.

CPD faculty applied, interviewed with UME leadership, and were approved by the Clinical Evaluation Committee. They were chosen based on their UME background, which included various course director roles, experience working with medical students in the clinical and research realms, and advising to various degrees. While there was no formal training, CPD faculty attended UME conferences, educational presentations, and workshops for contin-

ued professional development. They were kept updated and informed on residency-related affairs by MCW's Academic and Student Services.

In addition to individual student and group meetings, CPD directors meet with medical school committees and leaders on a regular basis. These include the Curriculum and Evaluation Committee, clerkship leaders, and the senior associate dean of student affairs (Figure 2). Interfacing with educational leaders enables CPD to assist with concerns about specific students and offer recommendations. The course is supported by a full-time educational coordinator.

Figure 2. Committees and People CPD Directors Meet With for the Course



Abbreviations: CPD, Continuous Professional Development; CEC, Curriculum Evaluation Committee.

Program Evaluation

Students complete a standardized institutional course evaluation at the end of each academic year that serves as the course's summative evaluation. Since the creation of the course in 2013, a total of 1399 evaluations have been submitted. The survey measures students' satisfaction on multiple CPD components: the overall course, individual CPD advisor feedback and accessibility, each specific mini course, mock interviews, and the OSCEs. Evaluations were done in Online Access to Student Information and Scheduling (OASIS) (Schilling Consulting, LLC). This is an advanced web-based system that manages scheduling, grades, and evaluations, among other functions. Exploration of evaluations was done within the platform, which analyzed quantitative data into sums and means. Open-ended questions asked students what they liked and disliked about the course. All CPD directors reviewed the free responses together at the end of each academic year. Basic thematic analysis was utilized to group responses.

Survey questions on CPD advisor feedback, CPD advisor accessibility, and whether the course supported student development used a Likert Scale of 1 to 6, with 6 = strongly agree, 4 = somewhat agree, 3 = somewhat disagree, 1 = strongly disagree. Survey questions on the short courses, individual meetings with CPD advisor, OSCEs, mock interviews, and the course overall used a Likert Scale of 1 to 5, with 5 = outstanding, 3 = acceptable, and 1 = unsatisfactory

RESULTS

Students shared positive and constructive feedback regarding the CPD course and its individual components. The constructive feedback was instrumental in shaping the course. Representative quotes are in Table 2.

Most students reported that the course supported their professional development. Similarly, students indicated they valued the feedback from their CPD advisors and appreciated their accessibility. Full results are shown in Table 3.

Table 2. Representative Student Feedback Used to Improve the CPD Course

Mini Course
• Some of the sessions were very helpful, others felt like they would have been more useful before starting M3 year.
• Some of the lectures would have been more valuable earlier, while others were duplications, and others were not entirely relevant
Observed Structured Clinical Examinations (OSCE)
• The relaying of meaningless numbers (unweighted OSCE score, overall assessment of our performance) was needlessly anxiety provoking and did not direct me in any way in how I should improve.
• The time from OSCE to feedback was way too long.
Advisor
• Individual CPD meetings were not as detailed or specific to my goals as I would've liked.
• They had way too many students [to] really provide individual guidance.
Mock Interviews
• Mock interviews should be earlier in the year.
• More prompt return of this feedback would be more helpful.

CPD, Continuous Professional Development.

Students rated the individual meetings with CPD advisors the highest compared to the other CPD components. Notably, the CPD elements most relevant to students beginning a new stage in their training—specifically the transitions to clerkship and residency and mock interviews—also were rated highly. Full course ratings are in Table 4.

DISCUSSION

The clinical years of medical school bring new challenges compared to the preclinical years. To meet these complex needs, the CPD course assumes an assortment of roles: ensuring student meet core competencies, individual career advising, longitudinally identifying patterns of behavior that warrant attention, and facili-

tating ongoing collaboration and interaction with stakeholders at the School of Medicine. The course ultimately strives to prepare students for successful careers in medicine. After functioning for nearly a decade, our data show that the majority of third- and fourth-year medical students value the CPD course and each of its components.

CPD was set to expand into the preclinical years. However, like some medical schools across the country, our institution is transitioning away from the traditional structure of 2 preclinical years followed by 2 clinical years. The new model will see the components of CPD (mini courses, OSCEs, advising) placed within the new curriculum, with each directed by different educational leaders versus a single faculty group. Nonetheless, the experiences of CPD over the past decade provide valuable lessons as the new curriculum takes shape.

Students found the advisory aspect of CPD particularly important, as demonstrated by their rating. In medical schools across the country, there is a spectrum of programs to address students' desire for mentorship and advising. Programs are diverse in their goals, structure, and execution. Common types include those that focus on career aspirations, personal growth, and a combination of areas, such as stress management, career planning, and professionalism.[8,10-12] Some are informal, while others are more systematic with comprehensive faculty development.[11-13] Even the manner in which students receive the program is variable, from one-to-one to small groups. While the individual advisor meetings within the CPD course were rated highly, they were time-intensive for faculty advisors, who reviewed all available evaluations, OSCE reports, and grades for each student advisee prior to the semiannual meetings. Despite this effort, constructive feedback from some students found that these meetings did not meet all of their expectations. This led to the creation of a preparatory sheet advisors used to ensure a more personalized meeting where both academic performance and students' concerns were addressed.

In this way, CPD was able to successfully fill a considerable need within medical education, as the advising of medical students has long been noted as either essential or beneficial.[14,15] The new curriculum continues to pair students with faculty—now with fewer students per faculty, which students favored in their feedback.

In addition to the advisory aspect, CPD managed several other mini courses to assist students as they progress from the preclinical to clinical years. Though common among other US medical schools, the format may be variable.[16] CPD's short, week-long courses have different names and structures at other institutions, but their vision and goal of addressing medically applicable but orphaned topics are comparable.[17,18] Our students rated the Transition to Clerkship course and Transition to Residency highest amongst the mini courses. This is not surprising, as transitions within medical education naturally invoke some amount of uncertainty and apprehension.[19] Thus, having sessions that target this clinical shift can ease some of the trepidation. The new curriculum will subsume many of the sessions conducted in the mini courses, with a particular focus on longitudinal topics.

Table 3. Student Rating of Continuous Professional Development (CPD) Course

	4 or Higher	5 or Higher	Average Rating (SD)
Useful feedback during CPD meeting	88%	70%	4.8 (1.2)
CPD advisor accessibility	95%	82%	5 (0.9)
Professional development was supported by this course	92%	72%	4.8 (1.1)

6 = strongly agree, 4 = somewhat agree, 3 = somewhat disagree, 1 = strongly disagree.

Table 4. Student Rating of Continuous Professional Development (CPD) Course

Components	3 or Higher	4 or Higer	Average Rating (SD)
Transition to Clerkship course	93%	61%	3.7 (0.9)
Winter Intersession	89%	52%	3.5 (0.9)
Summer Intersession	85%	49%	3.4 (1.0)
Transition to Residency	90%	64%	3.7 (0.9)
Individual meetings with CPD director	92%	71%	3.9 (1.0)
Observed Structured Clinical Examinations	92%	62%	3.7 (0.9)
Mock interviews	88%	65%	3.8 (1.1)
Overall course rating	91%	69%	3.8 (0.9)

5 = outstanding, 3 = acceptable, 1 = unsatisfactory.

The OSCE program also was rated well by students. This is consistent with the literature, which notes students generally find OSCEs useful.[20] With that information, in the new curriculum, OSCEs begin in the first year, providing students early clinical practice and feedback. Fourth-year mock interviews were rated favorably, similar to other published studies.[21,22] In general, residency mock interviews are largely specialty-run, meaning specialties organize practice interviews for students interested in that particular specialty.[22,23] CPD, however, took on the challenge of faculty recruitment across all specialties, which alone was a large operation. This was in addition to organizing and scheduling the multi-month interviews.

CPD represents a unique combination of programming related to professional development. But it should also be noted that each piece that comprises the CPD course is an independent entity. It is uncommon to have 1 course manage so many diverse medical education components specific to the clinical years. The amount of time and effort required to run any one of CPD's parts alone is considerable, much less all of them.

From an institution standpoint, it is possible that it was financially advantageous to have a small group of faculty run CPD and all of its parts. From an educational perspective, having a core group of faculty intimately involved in all components also had

benefits. The routine meetings with educational leaders provided CPD information about students who may need extra help. This allowed CPD advisors to assist when needed and to be another layer of support for those students. Furthermore, because CPD advisors represent not only a range of specialties but also have other academic and clinical roles, faculty recruitment for mini course sessions and mock interviews was broadened. Finally, OSCEs assess professionalism through communication and clinical skills. With CPD advisors' involvement, feedback to students could be more meaningful, coming from a person who knows them wholistically.

The evolution of CPD was guided by all stakeholders. The OSCEs, for example, were originally run by individual clerkships. The variability of how they were conducted led to their eventual centralization in CPD. Once rehomed, the OSCE program expanded with new cases, created uniform scoring rubrics, and provided more detailed analyses of students' scores. Student feedback helped refine one-on-one advising, shaped many sessions within the mini courses, and gave OSCE and mock interviews specific areas to improve.

CONCLUSIONS

Unsurprisingly, students value educational content specifically tailored to their clinical experience. While having a single course responsible for multiple programs and sessions appears to be uncommon for undergraduate medical education, our CPD course shows that it is possible and can be done effectively with a relatively small cohort of faculty. CPD in its current form will sunset; however, the lessons learned from its decade of existence provide an abundance of insights for both institutions with the traditional UME structure as well as those shifting into a longitudinal model.

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