


# Developing and implementing a faculty development curriculum for Japanese family medicine residency faculty

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## Abstract

**Background:** Despite the increase in family medicine residency in Japan, there are only a few structured faculty development (FD) programs. The objective of this project was to construct a consensus on core competencies of faculty to develop a faculty development curriculum in a Japanese family medicine context.

**Methods:** In 2015, a private FD initiative in the Mie University initiated a curriculum development in collaboration with FD fellowship at the University of Pittsburgh. A literature review and subsequent Delphi process were conducted for core competency development. Based on the core competency list, we designed and implemented a 2-year part-time FD curriculum from 2016. A course evaluation using pre-post confidence level was held during March 2017.

**Results:** Twenty-eight objectives were defined in five core domains: 1) care management/family medicine principle, 2) leadership/professional development, 3) administrative/management, 4) teaching, and 5) research/scholarly activity. A pre-post survey at the end of an academic year revealed a significant increase in learner confidence for “care management/family medicine principle” ( $P = .03$ ), “teaching” ( $P < .01$ ), and “research/scholarly activity” ( $P < .01$ ), as well as the total score ( $P = .03$ ).

**Conclusions:** A family medicine FD curriculum based on a faculty core competency list was developed by consensus in a Japanese family medicine context. The core competency was strongly context-oriented, and the relevance of the FD topics and opportunities to apply to the participants' current positions may be inevitable for learner engagement. Further curriculum refinements will be required to see whether the curriculum could be used for faculty development in other family medicine residencies.

## KEYWORDS

core competencies, curriculum development, faculty development, family medicine, residency training

## 1 | BACKGROUND

Recent innovations in primary care systems have formulated strong social infrastructures with economic benefits through its potential to improve health outcomes and health system efficiency. However, there is a disparity among nations in the quality of primary care and its training systems.<sup>1</sup> Japan is one of these nations where formal primary care training, and board certification, has been slow to develop. The Japanese Academy of Family Medicine (JAFM) implemented a 3-year family medicine residency to train board-certified family physicians in 2006. Since then, the numbers of family medicine residencies and board-certified family physicians have been increasing. In addition, according to a cross-sectional survey conducted at 17 Japanese medical schools in 2014, the top three specialty choices among final-year medical students were internal medicine, general practice including family medicine, and pediatrics.<sup>2</sup>

Along with the recent increase in the number of family medicine residency programs, there has been an increase in demand for nurturing a high-quality family medicine faculty. It is well accepted that systematic and continuous faculty development (FD) is necessary to nurture a high-quality faculty, based on the success of family medicine FD activities especially in the United States, Canada, and the United Kingdom since the late 1970s.<sup>3,4</sup> Although the Japan Primary Care Association (JPCA) has been offering faculty development for educators, most are sporadic workshops and there is a need for more structured longitudinal FD programs nationwide. In addition, given the accumulating evidence for the competency-based curriculum in medical education,<sup>5-9</sup> a core competency list, specific for faculty development, is vital for future FD curriculum development. Previous literature reveals a few different definitions of faculty competencies. For example, Bland et al developed 24 core competencies under five domains: education, administration, research, written communication, and professional academic skills.<sup>7</sup> More recently, Harris et al published the result of their longitudinal curriculum development in 2010, which summarized 53 core competencies in seven domains: leadership, administration, teaching, research, medical informatics, care management, and multiculturalism.<sup>8</sup> However, assuming that the core faculty competency varies across different settings, there was a need for a sound faculty competency list specific for the context of Japanese family medicine, to facilitate the development of family medicine FD curriculums.

The objective of this project was to construct a consensus for core competencies of faculty and to develop a faculty development curriculum in the context of Japanese family medicine.

## 2 | METHODS

### 2.1 | Context

Family medicine residency at Mie University is one of the oldest family medicine residencies in Japan. Starting from 2014, a

residency faculty member (MN), who had graduated from another longitudinal FD program in Japan, launched a private FD initiative within the Mie University Family Medicine Residency to train recent residency graduates. In September 2015, the initiative started an FD curriculum development project in collaboration with an FD fellow (KI) at the University of Pittsburgh. The founder and the program director of the FD fellowship at the University of Pittsburgh were also involved in the curriculum development process. The overview of the University of Pittsburgh St Margaret Faculty Development Fellowship and the results from a survey of its graduates regarding fellowship experiences have been previously reported elsewhere.<sup>10</sup>

### 2.2 | Study design

There are two main areas of exploration for the current paper: Phase 1 involves the Delphi consensus process for a faculty core competency list in a Japanese family medicine context; and Phase 2 develops a family medicine faculty development curriculum. For Phase 2, we used the Kemp model<sup>11</sup> to guide our curriculum development. The study protocol was approved by the Institutional Ethical Committee of Mie University Graduate School of Medicine (No. 1745). All participants provided informed consent prior to starting the study.

### 2.3 | Phase 1: Faculty core competencies development

A core competency list was developed, using a four-round Delphi process from November 2015 to March 2016. Seven core faculty physicians affiliated with the Mie University Family Medicine Residency were specifically recruited to represent the population served (urban and rural), practice settings (university hospital, community hospital, and clinic), and years since graduating medical school (6-10 years, 11-15 years, and more than 15 years). Prior to the first round of the Delphi process, the faculty members reviewed existing competency lists<sup>7-9</sup> and reached a consensus to adopt the competency list developed by Harris et al<sup>8</sup> as a basis for our discussion. After removing several items not relevant to the context of Japanese family medicine, KI and MN wrote the first draft of the core competency list prior to the Delphi process. The Delphi process participants reviewed the draft and added items that they believed were necessary, including those that were unique to our context. The agreement to each item was measured using a nine-point Likert scale ranging from 1 (strongly disagree) to 9 (strongly agree). The results and comments given in previous rounds were reported during each Delphi round. Revisions were made based on group discussion where necessary. Consensus was defined as all responses ranging within three consecutive numbers. The consensus of the faculty core competencies that achieved a median score of 8 or higher was chosen for the final core competency list.

## 2.4 | Phase 2: FD curriculum development

We used the Kemp model<sup>11</sup> to guide our curriculum development. The FD curriculum was designed with a particular focus on training junior faculty who had recently graduated from their family medicine residencies. Prior to the curriculum design, a needs assessment survey with open-ended questions was distributed via email to preliminary FD initiative participants to explore each faculty's career vision, perceived needs for specific competencies as a junior faculty member, and their expectations for the FD curriculum. Based on the results of Phase 1 and the needs assessment survey, the specific goals

of the FD curriculum, course contents, and the appropriate resource that would support teaching and learning activities were drafted by the program director (MN) and were discussed and agreed upon by core faculty members of the FD curriculum.

A pre-post survey of confidence level regarding the faculty core competencies was administered to the FD curriculum participants at the end of the first academic year. The items used a ten-point Likert scale, ranging from 1 (not confident at all) to 10 (very confident). The paired *t* test was used for a pre-post comparison of the survey response. All analysis was performed using Stata/SE 14.2.

**TABLE 1** Family medicine faculty core competency list

|   |   |
|---|---|
| Domain 1: Care management/family medicine principle |   |
| CF1   | Demonstrates basic understanding of EBM, appraises articles critically, and discusses the evidence appliance for patients   |
| CF2   | Conducts quality improvement projects in his/her own practice   |
| CF3   | Demonstrates and teaches individual patient care based on "family medicine principles," such as patient-centered clinical methods and family-oriented patient care  |
| CF4   | Discusses community-oriented primary care by reflecting actual cases with ACCCA/C concepts  |
| CF5   | Facilitates interprofessional education and interprofessional work  |
| CF6   | Views own practice from a public health perspective (healthcare system, cost, resource allocation, public and individual benefits, social determinants of health)   |
| Domain 2: Leadership/professional development       |   |
| LP1   | Recognizes that leadership is relevant for everyone in various settings   |
| LP2   | Identifies strengths and weaknesses in self and others, and manages a project team as a leader  |
| LP3   | Acts as a mentor for learners to achieve individual development   |
| LP4   | Resolves conflicts, negotiates well, and fosters collaboration and cooperation  |
| LP5   | Develops one's own career based on a long-term (eg, 5-y) goal   |
| LP6   | Realizes the impact of a shared vision  |
| Domain 3: Administrative/management skill           |   |
| AM1   | Interprets the healthcare insurance system and manages his/her own practice in accordance with latest insurance policy  |
| AM2   | Describes financial status of his/her own practice by reading financial statements  |
| AM3   | Communicates and negotiates effectively with stakeholders inside and outside the organization with recognition of personal preferences and characteristics of various tools (eg, oral, written, email, SNS) |
| AM4   | Identifies mission-based organizational dynamics (organization theory, personnel management, learning organization)   |
| AM5   | Participates actively in meetings with effective meeting skills   |
| Domain 4: Teaching                                  |   |
| T1  | Teaches learners to effectively provide office-based care, using teaching frameworks such as five microsills  |
| T2  | Adequately facilitates individual and small group teaching based on adult learning theory   |
| T3  | Gives appropriate feedback, even to difficult learners  |
| T4  | Designs, delivers, and evaluates educational programs   |
| T5  | Discusses learning objectives and selects appropriate strategies for each learner depending on their individual needs   |
| T6  | Delivers and supervises effective presentations using audiovisual materials and handouts adequately   |
| T7  | Evaluates and facilitates learner's writing portfolios according to the JPCA rubric   |
| Domain 5: Research/scholarly activity               |   |
| RS1   | Formulates a feasible research question in the PICO format  |
| RS2   | Participates in research planning, data collection, data analyses, and writing as a research team member  |
| RS3   | Adheres to guidelines and regulations regarding the ethical conduct of research and human subjects  |
| RS4   | Continues some sort of scholarly activities either by conference presentation, scientific writing (original research, review, case report, and letter), or writing books/journals                           |

### 3 | RESULTS

#### 3.1 | Phase 1: Faculty core competencies development

In the first round of the Delphi process, the draft of the core competency list, based on the existing list,<sup>8</sup> included 28 preliminary core competencies. These items were categorized in five domains which reflected the essential core competency areas for successful family medicine faculty: 1) care management and family medicine principle; 2) leadership and professional development; 3) administrative and management skills; 4) teaching; and 5) research and scholarly activity. Among the seven faculty physicians invited, seven (100%) participated in the second and third rounds of the Delphi process and six (85.7%) participated in the fourth round. In the second, third, and fourth Delphi rounds, 19 items, 25 items, and 28 items reached consensus and achieved a median score of 8 or higher. The final 28 consensus faculty core competencies in a Japanese family medicine context are shown in Table 1 (Appendix S1). None of the preliminary items were omitted after iterative revisions based on a panel discussion.

#### 3.2 | Phase 2: FD curriculum development

##### 3.2.1 | Needs assessment

All three 2014 FD initiative learners agreed to participate in the needs assessment survey. Participants wanted to mainly learn about educational theories, educational skills, educational frameworks, management skills, as well as a few practical business skills (eg, work-life balance, anger management skills). They cited their big workload and lack of time for the program participation as two major challenges. As for the career direction of the participants, two of them were seeking clinician-educator positions at a community hospital or clinic, and another learner wanted to obtain an academic position at a university.

##### 3.2.2 | Curriculum design and implementation

Based on the consensus faculty core competency list, we designed a 2-year part-time FD program with a curriculum goal of “enhancing family medicine faculty’s clinical, educational, administrative, and scholarly competencies dependent on each participant’s future career aspiration.” The FD curriculum was designed to have protected time during the day for seminars once or twice a month, as well as on-the-job training, longitudinal project-based learning opportunities, course assignments (eg, video precepting), and supervised writing of course portfolios. Beginning in April 2016, a new curriculum has been implemented based on the new competency list with three new learners. Nine faculty members were allocated to be responsible for the 28 competency areas according to each teacher’s

expertise. From April 2016 to March 2018, we held 29 educational sessions (Table 2). In addition, the FD participants had mentorship opportunities from both the FD program director and senior faculty at their workplace.

**TABLE 2** Model family medicine FD curriculum

| Day | Domain | Core competency | Topic   |
|-----|--------|-----------------|---|
| 1   | C/F    | CF3, CF4        | Disease and illness                                   |
| 2   | A/M    | AM5, LP2, LP5   | Time management                                       |
| 3   | T      | T2, T4, T5      | Needs assessment and Objectives                       |
| 4   | T      | T1, T3          | 5 Microskills/precepting                              |
| 5   | T      | T1, T2, T4, T6  | Educational theories and methods                      |
| 6   | C/F    | CF3, CF4        | Shared decision making                                |
| 7   | L/P    | LP1, LP2, LP5   | Logical thinking 1                                    |
| 8   | R/S    | RS1, RS2, RS4   | Research boot camp                                    |
| 9   | T      | T2, T4, T5, T6  | Curriculum design                                     |
| 10  | C/F    | CF3, CF4        | Continuity of care                                    |
| 11  | A/M    | AM1, AM2        | Financial 1 (Profit and loss statement/balance sheet) |
| 12  | T      | T7, T3          | Portfolio evaluation                                  |
| 13  | T      | T2, T3          | Small group teaching/video review                     |
| 14  | L/P    | LP1, LP2, LP5   | Self-reflection                                       |
| 15  | A/M    | AM1, AM2        | Financial 2 (financial statement)                     |
| 16  | T      | T6              | Presentation skill                                    |
| 17  | C/F    | CF3             | Healing   |
| 17  | L/P    | LP1, LP2, LP5   | Logical thinking 2                                    |
| 18  | L/P    | LP1, AM4        | Visionary leadership                                  |
| 19  | R/S    | RS3             | Research ethics                                       |
| 20  | L/P    | LP2, LP4        | Project management                                    |
| 20  | R/S    | RS1, RS4, CF1   | Literature review                                     |
| 21  | R/S    | RS4             | Letter to the editor                                  |
| 22  | L/P    | LP1, LP2, LP5   | Leadership development                                |
| 23  | A/M    | AM4             | Learning organization                                 |
| 24  | L/P    | LP2, LP4, AM3   | Leadership 360-degree feedback                        |
| 25  | A/M    | LP6, AM3, AM4   | Analyzing vision and management strategy              |
| 26  | T      | T2, T3, T4      | Difficult teaching encounter                          |
| 27  | A/M    | AM1, AM2        | Marketing   |
| 28  | T      | T6, AM5         | Presentation and facilitation                         |
| 29  | A/M    | AM3, LP4        | Negotiation   |

Note: Domain 1: C/F (Care management/family medicine principle). Domain 2: L/P (Leadership/professional development). Domain 3: A/M (Administrative/management skill). Domain 4: T (Teaching). Domain 5: R/S (Research/scholarly activity).

**TABLE 3** Pre-post comparison of learners' confidence

| Domain score <sup>a</sup> (Max score)          | Pre score (SD) | Post score (SD) | P-value |
|--|----------------|-----------------|---------|
| Care management/family medicine principle (60) | 30.7 (15.2)    | 40.3 (12.3)     | .032    |
| Leadership/professional development (60)       | 25 (18)        | 34 (12.5)       | .153    |
| Administrative/management skill (50)           | 18 (9.2)       | 31 (9.5)        | .066    |
| Teaching (70)                                  | 27.7 (7.6)     | 43 (7.9)        | .009    |
| Research/scholarly activity (40)               | 17.3 (7.8)     | 24 (7.9)        | .003    |
| Total score (280)                              | 118.7 (55.5)   | 172.3 (48.7)    | .025    |

<sup>a</sup>The 28 competency items were assessed using a ten-point Likert scale, ranging from 1 (not confident at all) to 10 (very confident). The domain score implies the sum of each competency score within the domain.

### 3.2.3 | A pre-post confidence level survey

All three FD curriculum participants responded to the pre-post survey at the end of the academic year, which revealed a significant increase in learners' confidence levels for the domain scores in "Care Management/ Family Medicine Principle" ( $P = .03$ ), "Teaching" ( $P < .01$ ), and "Research/ Scholarly activity" ( $P < .01$ ), as well as the overall score ( $P = .03$ ). On the other hand, participants' confidence level in "Leadership/Professional Development" and "Administrative/Management Skill" domains after completion of an academic year did not significantly improve compared to the baseline (Table 3). The core competencies with significant improvement in participants' confidence level are listed in Table 4.

## 4 | DISCUSSION

This longitudinal and competency-based FD program has a unique domain, "care management and family medicine principle," that includes several items not listed in the existing competency lists from other countries where family medicine has been well developed.<sup>7-9</sup> Similarly to our results, a recent qualitative study that involved

participants from ten low- and middle-income countries reported that a consistently identified FD need was how to teach the family medicine context and perspective.<sup>12</sup> These findings may imply that the core faculty competency is strongly context-oriented and changes with the times, and that our core competency list could be transferred to other countries where faculty resources in family medicine are scarce.

Based on feedback from FD curriculum participants, there were several potential tips for a successful FD. First of all, relevance of the topics and opportunities to apply in their current positions may be inevitable for learner engagement. The lack of improvement in learners' confidence level for domain 2 (leadership and professional development) and domain 3 (administrative and management) may suggest the need for legitimate peripheral participation (LPP),<sup>13</sup> especially in administrative and leadership opportunities for junior faculty. Legitimate peripheral participation indicates that novice participants in a community of practice should have opportunities to engage in simple or lower risk tasks that are important to the community's goals.<sup>13</sup> Giving FD participants a leadership role in lower risk tasks, such as quality improvement, educational sessions, or simple interprofessional collaboration, would be an effective strategy to facilitate learning in these domains. Secondly, an interactive learning environment based on adult learning principles<sup>14</sup> was effective, if participants have a certain level of baseline knowledge and self-directed attitude. In addition, well thought-out order, amount, and timing of topics would be required so that learners could link learning contents in a relevant and efficient fashion.

Although our evaluation mainly focused on learners' "reaction" and "learning" based on the Kirkpatrick model,<sup>15</sup> there were noteworthy "behavioral change" and "organizational performance" level accomplishments in all three learners. Two letters to the editor, written by one of the participants with academic career intentions, have been published.<sup>16,17</sup> One learner assigned to be in charge of student and resident education in a group practice, while another learner, who had sought a clinician-educator position, was promoted to be a department director of a residency-affiliated hospital.

**TABLE 4** Faculty competencies with significant improvement in each domain

|   |
|---|
| Identifies mission-based organizational dynamics ( <b>Administrative/management skill 4</b> )   |
| Participates actively in meetings with effective meeting skills ( <b>Administrative/management skill 5</b> )  |
| Teaches learners to effectively provide office-based care, using teaching frameworks such as five microskills ( <b>Teaching 1</b> )                                   |
| Adequately facilitates individual and small group teaching based on adult learning theory ( <b>Teaching 2</b> )   |
| Discusses learning objectives and selects appropriate strategies for each learner depending on their individual needs ( <b>Teaching 5</b> )                           |
| Continues some sort of scholarly activities either by conference presentation, scientific writing, or writing books/journals ( <b>Research/scholarly activity 4</b> ) |

The current study has some limitations. Firstly, our faculty core competency list was extracted from a limited number of physicians in a single residency program; thus, further evaluation will be required to see whether the faculty core competencies could be used in other residencies. Secondly, we only included physicians in the Delphi process. Other healthcare experts, as well as patients, may have different perspectives that would need to be explored in the future refinement of the faculty core competency list. Lastly, we could not administer the pre-post learner evaluation at the end of the 2-year curriculum due to several logistic reasons. Further curriculum evaluations using both quantitative and qualitative data, as well as curriculum implementation in other settings, would be required in the future.

## 5 | CONCLUSION

A family medicine FD curriculum based on a consensus on the faculty core competency list was developed in a Japanese family medicine context. We found that the core faculty competency was strongly context-oriented and changed with the times. Relevance of the FD topics and opportunities to apply it to their current positions may be inevitable for learner engagement. Further curriculum refinements will be required to see whether the curriculum could be used for faculty development in other family medicine residencies.

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### CONFLICT OF INTEREST

The authors have stated explicitly that there are no conflicts of interest in connection with this article.

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### SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

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