

## Review of Japanese literature

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We conduct a literature review to understand the current situations and practices on workforce development for Health EDRM in Japan. Based on the protocol agreed among the research team members, a systematic approach was used for the literature search. We search articles written in Japanese by using the ICHUSHI database. The search terms below included (“disaster” or “health emergency”) and (“education” or “training”) related Japanese words were used as following:

(((((養成/AL) and (AB=Y and PT=会議録除く)) and (((災害/TH or 災害/AL) and (AB=Y and PT=会議録除く)) or ((健康危機/AL) and (AB=Y and PT=会議録除く)))) or (((教育/TH or 教育/AL) and (AB=Y and PT=会議録除く)) and (((災害/TH or 災害/AL) and (AB=Y and PT=会議録除く)) or ((健康危機/AL) and (AB=Y and PT=会議録除く)))) or (((育成/AL) and (AB=Y and PT=会議録除く)) and (((災害/TH or 災害/AL) and (AB=Y and PT=会議録除く)) or ((健康危機/AL) and (AB=Y and PT=会議録除く)))) or (((体育とトレーニング/TH or 訓練/AL) and (AB=Y and PT=会議録除く)) and (((災害/TH or 災害/AL) and (AB=Y and PT=会議録除く)) or ((健康危機/AL) and (AB=Y and PT=会議録除く)))))) not (((整形外科/TH or 整形外科/AL) and (AB=Y and PT=会議録除く)) .

As of October 23, we identified 2,690 articles published since 1990. The initial screening was done by two researchers independently using titles and abstracts, and another researcher made the final decision what the initial screening did not agree on. The articles met all the following criteria were examined with full text papers in the next step: 1) written in Japanese, 2) addressing a disaster or humanitarian crisis, 3) addresses one of the health workforce development domains of Health EDRM. Remained titles were 743 after the initial screening.

The next step was the full text screening, and this was also the same as the initial screening, done by two independent researchers and one complementary researcher. The articles reporting health workforce development activities based on military setting, describing the training of one single type of clinical procedures or surgery, or focusing mainly on the experience conducting research in disaster settings were excluded. The articles which were unable to obtain full text and conference proceeding, commentary, letter, or editorial

were also excluded. Finally, 384 articles were subjects to be examined.

Table 1 shows the result of classification 384 articles according to the domain of the theme to be dealt. The most representative domain was “Health care training”, which counted 138 which reported Health EDRM related trainings or drills. The next domain was “Emergency operations and disaster planning”, which counted 61. Majority of the articles reported on the experience of disaster response at a particular medical institution and the content of the disaster response plan. The domain with the third largest number of articles was “Competencies, curriculum, role, crisis standard”. There were 56 articles that reported the competencies for Health EDRM or examples of curriculum to enhance the competencies.

**Table 1. Number of articles classified according to the domain of the theme (N=384)**

<b>Domain</b>	<b>Number of articles</b>
1. Policy, law and finance	1
2. Risk and communication	7
3. Administration - recruitment, deployment, retention, protection, surge, volunteer	23
4. Availability of Health Care Workers during disasters	27
5. Health care training	138
6. Competencies and curriculum	56
7. Local and external workforce collaborations	22
8. Leadership and managerial skills	10
9. Emergency operations and disaster planning	61
10. Hospital, health infrastructure and services	16
11. Community Health EDRM	21
12. Monitoring & Evaluation and cost effectiveness	2

The target populations that were dealt with in the articles on Health care training were varied. Almost half of the articles (66 in total) focused on the training of nurses, public health nurses, or nursing students. Thirty-five were about disaster training or drills which were held in medical facilities. There were 15 articles discussing the training for Disaster Medical Teams, and Paramedics. More wide-range training and drills which involved public health systems were also reported, but numbers were limited, in total 6.

Nursing articles were also dominant in the domain of “Competencies and curriculum”. Thirty-six out of 56 were related nursing competencies and curriculum; 6 articles described disaster nursing competencies, 7 discussed specific competencies for public health nurse responding to disaster and health emergency, 21 reported curriculum and courses for

undergraduate nursing students, and 2 were about continuing education for clinical nurses. The rest of the articles were about pharmacists(4), nutritionists(3), public health professionals(3), mental health professionals(2), social welfare and care workers(2), and others including medical students(3).

Many articles on workforce development for Health EDRM have been published in Japanese. Especially in the field of nursing, many reports have been made on education and training, and competencies and curriculum. This indicates that workforce development for Health EDRM is an important and urgent issue in Japan, where many disasters occur, and there is a great deal of interest in it. However, most of the literature types are practical reports or observational studies at one institution with small participants. It was also suggested that the proposed training, competencies, and curriculum were empirically constructed, with insufficient explanation of the theoretical and scientific grounds. Furthermore, there is little relevance between articles and the evaluation and validation of effectiveness is inconsistent. It suggests that a major issue is that knowledge accumulation has not been done systematically.

Systematic knowledge accumulation is essential to promote evidence-based workforce development strategies and practices. To that end, it is first necessary to establish research guidelines and frameworks for research for this field with multi-disciplinary collaboration and consensus. This leads to research efforts getting together and avoiding discrepancies and inconsistencies among individual studies.