

Guiding patients to appropriate care: developing Japanese outpatient triage nurse competencies

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ABSTRACT

Japanese patients often seek hospital services without a primary provider's referral. A triage nurse who is the initial point of contact for a patient is challenged with the task of expertly evaluating the urgency of the condition and selecting the appropriate specialty service for every patient's needs. A triage nurse must also recognize any conditions requiring emergency medical services instead of a specialty outpatient service. A modified Delphi method was used to establish expert consensus regarding triage nursing competencies for secondary and higher-level health care facilities in Japan.

The initial Delphi round was completed using a questionnaire of 80 competencies that were evaluated by 85 Japanese nurse experts with in-depth knowledge of triage and/or the current Japanese hospital system. Four additional competency items were added based on the experts' suggestions for a total of 84 items. The experts rated these items on a 7-point Likert scale based on importance. Minimal attrition rate yielded consistent and rich results.

The results were analyzed to identify items rated as very important by the majority. Twenty-two items were included in the final list of competencies. The authors then refined the language and reorganized the items into four proposed domains. The proposed domains and the refined list of competencies provide a foundation for the development of training programs for outpatient triage nurses in the current Japanese health care system.

Keywords: triage nurse, nurse competency, emergency department, primary care, Japanese healthcare delivery

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INTRODUCTION

Background and Significance

The foundation of Japanese health care consists of collaboration between regional hospitals and independently practicing primary care physicians who refer patients to higher levels of care as

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needed. Every Japanese health care facility with emergency medical services (EMS) is classified as primary, secondary, or tertiary. The basic concept underlying this three-tier classification is to identify services for patients in a stepwise fashion when primary care providers make referrals. Unfortunately, Japanese patients do not currently embrace this concept consistently throughout Japan, and many see no distinction between the role of primary care providers and the role of hospitals in the community.

A 2014 report by the Ministry of Health, Labour and Welfare revealed that only 36.2% of patients who sought hospital outpatient services had referrals from their primary providers,¹ a minimal improvement from the 33.8% reported in 2011.² The Health Ministry of Japan is currently leading a national initiative to strengthen medical education to increase the number of primary care providers and promote the utilization of primary physicians prior to hospital services. Additional fees are charged for those who seek direct hospital care without a referral from primary providers; however, despite this effort, patients continue to frequently seek care directly at secondary facilities without a primary provider's referral.³

Shimazaki⁴ finds this Japanese attitude problematic; hospitals offer inpatient services in addition to specialty outpatient clinics such as internal medicine, surgery, endocrinology, cardiology, neurology or orthopedics, while primary care providers in the community do not offer these specialties in a comprehensive manner. Shimazaki⁴ highlights how Japanese patients view these two services almost equally in function because of the low-cost medical access national health care offers. The role of the gatekeeper or a guidepost at the hospital, Shimazaki points out, is therefore essential in order to appropriately align patients' needs with the correct services when patients arrive at hospitals without referrals.

The excellent provision of extremely low-cost health care in Japan does not automatically lead users to the appropriate health care services, which can potentially result in unnecessary utilization of services, delays in treatment, deterioration in patient conditions, and unnecessary patient suffering. A tragedy could occur if a patient who is unaware of his or her need for emergent medical attention reports to a secondary facility. A triage nurse is tasked with recognizing the critical nature of patients' conditions without a primary provider referral or medical history by quickly and thoroughly examining patients and assessing their needs.

Outpatient Triage Nurses in Japanese Hospitals

The author surveyed 241 Tokyo hospitals with EMS in 2015, which revealed that 76% (47 of 68 respondents) of hospitals appointed specific staff members to assist patients in identifying an appropriate physician or service at registration.⁵ Of these 47 hospitals, 55% (n = 27) assigned nurses to this role. The preliminary studies, including the interviews and observations on Table 1, also revealed that Japanese hospitals considered the triage role as a critical priority to ensure that the patients are led to appropriate outpatient physicians. These nurses are required to possess a certain degree of medical knowledge to seamlessly collaborate with multidisciplinary members of numerous outpatient departments within the hospital.

As of August 2016, a review of the Japanese literature produced only five results with the keywords "Jushin Soudan" (consultations to seek the most appropriate specialty),⁶⁻¹⁰ all of which were published prior to 2002, indicating the paucity of recent studies related to this topic. The need to refine and support the triage role was recognized as early as 1986 by Miyake and Masuzawa⁸ who highlighted the complex process of selecting an appropriate physician. Later, Hashimoto⁹ advocated that nurses assess patients by collecting individual information to determine care level and urgency and identify the appropriate outpatient service within the hospital system. Hashimoto highlighted the following key factors: the priority of treatment, protection of privacy, predictability of serious conditions, responsibility for performing ongoing assessment to ensure

Table 1 Summary of Competency Items Identified from the Preliminary Studies

	First Survey in 2013	Second Survey in 2014	Third Survey in 2015 ⁵
Method	Observations	Interviews	Survey
Sample	Kanagawa Prefecture General Hospital Nurse Consultation Booth and Initial Visit Reception; Tokyo General Hospital General Information Desk	Nursing administrators at seven general hospitals in the Kanto area (A–G)*	241 hospitals in Tokyo with secondary emergency services
Study Duration	September–October 2013 (total: 5 days; 30 hours)	September–October 2014	September 2015
Ethics Approval	Tokyo Ariake Medical University Ethics Committee Approval No. 24	Tokyo Ariake Medical University Ethics Committee Approval No. 108	Tokyo Ariake Medical University Ethics Committee Approval No. 190
Results	<p>A triage nurse is able to</p> <ul style="list-style-type: none"> • judge the urgency of a condition and transfer to a higher level of care when necessary. • interview and collect pertinent information on patients' symptoms to guide them to the most appropriate physician/specialty. • provide guidance regarding suggested care while taking patients' personal desires or choices into consideration. • appropriately explain necessary information to patients. • coordinate care with other members or departments through effective communication and consultation requests. 	<p>A triage nurse is able to</p> <ul style="list-style-type: none"> • conduct appropriate triage. • examine symptoms and the progression of existing problems. • make clinical judgements concerning urgency and/or severity. • demonstrate relevant knowledge of pathophysiology and make judgements accordingly. • assess the appropriateness and/or safety of patients continuing to receive care at the facility. • remain informed of patient volume demands at the outpatient department and coordinate with relevant personnel to facilitate patient flow. • consult with physicians as necessary. • explain the specific differences of primary care vs. hospital care. • adequately explain the clinical rationale for any suggested treatment. • handle patient concerns with care. 	<p>A triage nurse is able to</p> <ul style="list-style-type: none"> • make clinical judgements based on appropriate knowledge and experience. • collaborate with physicians and other multidisciplinary members of the team to meet each patient's needs.

*Hospital A (Tokyo, 400 beds, Director of Nursing); Hospital B (Ibaraki Prefecture, 800 beds, Director of Nursing); Hospital C (Chiba Prefecture, 149 beds, Director of Nursing); Hospital D (Tokyo, 815 beds, Nursing Department Deputy Director); Hospital E (Chiba Prefecture, 530 beds, Deputy Nursing Section Manager); Hospital F (Chiba Prefecture, 81 beds, Director of Nursing); Hospital G (Kanagawa Prefecture, 187 beds, Outpatient Manager)

serious conditions are not overlooked, and the necessity of an inter-facility communication system among hospitals with EMS.

The current situation in Japan reveals that the role Hashimoto⁹ advocates for nurses has not been widely accepted in Japanese health care settings. Nurse competency and lack of training have been cited as a barrier to the establishment of quality nurse triage systems in Japan today, partially because the nursing competencies required to perform outpatient triage have not been clearly defined, described, proposed, or established in Japan. If the national initiative had been successful, refining the role of triage nurses at hospitals with EMS may not be necessary. However, only one third of patients that seek care at regional or local hospitals have an appropriate referral.³

Identified Gap in the Triage Nurse Role Competencies

The role of an outpatient triage nurse in hospitals with EMS is essential to present-day Japan. Targeted training is necessary to ensure triage nurses understand the logistics of the triage process and recognize not only commonly seen critical conditions and associated symptoms but also symptoms related to chronic conditions that require urgent evaluation. The identification of the appropriate specialty services, including the emergency services relies on the expert judgement. However, no national standard for triage nurse role or an agreed-upon set competencies for triage nurses that educational/training content could be based on exist in Japan. In order for hospitals to foster effective care, refining and defining competency standards for outpatient triage nurses must become a priority.

A 3-round modified Delphi study was designed to seek expert opinions on triage nurse competencies and to refine the competencies using the following research question: What competencies are required of an outpatient triage nurse at a secondary Japanese hospital that offers emergency medical services?

PRELIMINARY WORK FOR THE DELPHI STUDY

The authors assembled a list of potential competencies (see Tables 2, 3, and 4) based on the previous studies (Table 1) and the literature review. A 3-round modified Delphi study was used to gain consensus from nurse experts.

Systematic Literature Review to Identify Triage Nurse Competencies

The Cumulative Index to Nursing and Allied Health Literature (CINAHL) and Mendeley were searched for full-text publications using the keyword “triage,” and the search was limited to the past 5 years (2012–2017). A total of 141 abstracts were extracted from CINAHL. Two researchers independently identified and reviewed 6 full articles and found 3 relevant studies.^{11–13} Searching Mendeley search for the keyword “triage” resulted in 142 abstracts. After eliminating an Arabic abstract and a duplicate abstract, the same 2 researchers independently reviewed the remaining 140 abstracts. A total of 37 full articles were reviewed, and the researchers found 6 relevant publications.^{14–19} Numerous competencies were extracted from each of the relevant publications.

Six studies^{10,20–24} published in Japanese concerning outpatient triage nurses were also referenced to identify additional relevant competencies. These studies were found using the latest nursing index web search, which led to 211 results for the keyword “triage,” 83 for “nursing counseling,” and 5 for “outpatient triage.” After reading abstracts of the results, 27 full articles were selected; these articles were read independently by two researchers and lead to the selection of six relevant Japanese articles. In addition, 4 Japanese-published triage textbooks,^{25–28} 2 triage

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textbooks in English,²⁹⁻³⁰ and 1 Japanese textbook on primary care³¹ provided valuable additional competencies. The Triage Guide for General Practice,³² an official primary triage guide in the Netherlands that was developed as a result of the country's unique healthcare challenges, was also examined for relevant competencies.

Table 2 Competency Items Based on the Conceptual Framework of the Ability to Understand Patients

I. Ability to Understand Patients	
Item #	A. Ability to Apply Knowledge
1	Demonstrates skills necessary for triage
2	Understands triage methods
3	Assesses urgency/severity
4	Prioritizes patients' needs to a higher level of care
5	Incorporates institutional policies/guidelines in decision making
6	Recognizes conditions that must be addressed by the emergency department
7	Recognizes symptoms that require outpatient emergency services
8	Performs physical assessments using auscultation, palpation, consultation, and patient interviews
9	Makes clinical judgements
10	Assesses patients' care preferences during the decision-making process
11	Listens carefully to ensure consistency in patient statements
12	Anticipates potential changes in conditions based on the assessment
13	Identifies the need for additional assessment/exploration
14	Uses critical thinking while performing comprehensive assessments
15	Assesses patients' cultural background information
16	Assesses patients' psychosocial and mental needs
17	Promptly performs comprehensive physical assessments based on priorities
18	Critically analyzes, organizes, interprets, infers, and makes decisions based on physical assessments
19	Recognizes potential links between lifestyle factors and a patient's condition.
20	Selects the most appropriate transfer method for patients based on urgency if necessary
21	Recognizes and assesses victims of violence/abuse
22	Assesses if a patient agrees with the suggested treatment/interventions
23	Is knowledgeable about the scope of services available at their institution
24	Is knowledgeable about the workflow/logistics of handling outpatients at their institution
25	Is knowledgeable of the medical specialties offered at their institution
26	Is aware of current patient volume demands in each department
27	Understands emergency outpatient policies, including how to prioritize or re-triage patients
28	Understands multidisciplinary collaboration between services, departments, and other regional centers
29	Is aware of additional services at other regional centers that are not offered at their institution
30	Knows how to coordinate care with other institutions in the region
31	Is knowledgeable about emergency medical services in the area where their institution is located
32	Practices skilled infection control techniques
33	Has received training in and demonstrates skilled self-defense as needed
34	Is an expert patient educator
81	Understands patients' visits comprehensively, including previous treatment
82	Identifies the primary purpose of patients' visits and of potential treatment
83	Obtains information to understand how patients' current care may impact their hospital care
84	Performs ongoing assessment after the initial triage
B. Developing Interpersonal Relationships	
35	Makes proper introductions to inform patients of his/her role
36	Identifies and confirms patients' needs
37	Communicates effectively with patients and families
38	Discreetly obtains necessary information from victims of violence/abuse
39	Behaves professionally
40	Displays proper interpersonal skills
41	Communicates emergency needs in a timely manner
42	Communicates effectively with multidisciplinary members, families, and service providers in the community
43	Asks accurate questions to obtain applicable/relevant information from patients
44	Approaches patients with compassionate and considerate manners

Table 3 Competency Items Based on the Conceptual Framework of Patient-Centered Nursing

II. Practicing Patient-Centered Nursing	
Item#	A. Providing Nursing Care
45	Responds effectively to abuse victims
46	Assesses psychosocial needs and offers appropriate options for optimal care
47	Guides a patient in making a selection from multiple provider options
48	Communicates the triage process and care levels to every patient
49	Effectively communicates the process and fees involved in receiving service
50	Effectively communicates how the institution coordinates care with a patient's primary provider
51	Communicates effectively to guide a patient to another facility if necessary service is better provided elsewhere
52	Provides information regarding waiting time
53	Guides patients to the appropriate specialty department where further examination can appropriately address the patient's needs
54	Provides appropriate patient counseling
55	Supports a patient appropriately by considering psychosocial/mental needs
56	Effectively considers patients' cultural/religious/ethnic backgrounds when providing support
57	Multitasks, if needed, to address patients simultaneously
58	Skillfully synthesizes patient responses as vital data in guiding the patient to the most appropriate department within the facility
B. Ethical Practice	
59	Accepts any patient who reports to the triage station
60	Provides privacy while obtaining a patient's personal information
61	Obtains required informed consent prior to guiding a patient to a proposed department
62	Informs a patient of his/her autonomous rights
63	Respects individual needs and values patient autonomy
C. Professional Relationships and Management	
64	Communicates patient information accurately among professional members of the hospital
65	Communicates effectively with the medical team to facilitate care
66	Recognizes the need to consult appropriate team members in a timely manner to achieve optimal care for every patient
67	Delegates tasks to other professional team members as appropriate
68	Multitasks when needed (parallel processing)
69	Prioritizes the order in which physicians should be seen (if more than one is necessary)
70	Prioritizes patients' expectations and desires while coordinating care
71	Expertly educates staff members as needed
72	Maintains professional and cordial relationships with colleagues
73	Understands and embraces the value of a triage nurse

Table 4 Competency Items Based on the Conceptual Framework of Ensuring Quality Nursing

III. Ensuring Quality Nursing	
Item#	
74	Consistently evaluates the outcomes of triage nurses' decision-making support
75	Maintains data regarding triage department support provided to patients
76	Maintains data regarding subsequent events and outcomes after triage
77	Evaluates/analyzes the effectiveness of the triage department's decision-making support
78	Evaluates/analyzes the outcomes of the triage department's decision-making support
79	Performs quality analysis to follow the outcomes of triage service
80	Routinely synthesizes triage data to present to leadership in an effort to contribute to maximum quality improvement efforts

Competencies from Preliminary Studies

Observational studies, interviews, and surveys⁵ were conducted at multiple health care settings in the larger Tokyo area from 2012–2015. The findings from each study reported on Table 1 added valuable, practical competencies to this study. A total of 180 competencies were identified as a result of the in-depth literature search and preliminary studies, Selecting Questionnaire Items for the Modified Delphi Process

The conceptual framework for nursing competency reported by Matsutani et al³³ was used as the foundation for the 3 initial primary domains to organize the competency items for triage nurse competency: 1) understands patient needs, applies knowledge, and develops relationships with patients and families; 2) practices patient-centered nursing care focused on ethical practice and professional relationships/management; and 3) utilizes advanced quality improvement methods.

After carefully considering each of the 180 items in relation to the 3 domains, a total of 80 items were selected (see Tables 2, 3, and 4). In response to suggestions from the experts, 4 items (in Table 1, I-A [81–84]) were added after the first Delphi round.

Content validity was evaluated by 3 PhD nurse experts using Mokkink's³⁴ COSMIN checklist. Additionally, 4 nursing administrators and 1 physician evaluated the surface validity to assess the subjectivity of the measurement procedure as a valid measure for this study. To finalize the list, the 2 primary researchers deliberated terminology and clarity in any areas of concern.

Next, 4 nursing administrators and 1 physician piloted the questionnaires twice by closely following the exact procedures that experts would be asked to follow. In addition, the Wilcoxon signed rank sum test was used for each item to assess statistical difference. No items differed significantly between the test and the retest.

MATERIALS AND METHODS

Study Design and Setting

A 3-round modified Delphi study was conducted in Japan from August–November 2017. The Delphi method is widely used to gather consensus from selected experts within a specific area. The technique is designed as a group communication process which aims to achieve agreement on a specific subject matter.³⁵

Samples and Sampling Method

A convenience sample of experts was recruited using the following methods: 1) invitations sent to Directors of Nursing at 1,000 randomly selected hospitals from a list of all hospitals in Japan; 2) invitations sent to former research collaborators from the Tokyo Metropolitan Government survey conducted in 2015; 3) invitations to authors of published dissertations that discussed “outpatient triage” who submitted a research participation agreement; and 4) invitations sent to colleagues in the primary researchers' professional networks.

Inclusion Criteria

To be considered an expert, each individual was required to have experience working in a secondary Japanese health care institution where multiple subspecialty services, including EMS, were offered. Additionally, each expert had to meet 1 of the following inclusion criteria: 1) worked as an outpatient triage nurse for a minimum of 1 year; 2) served as a nurse manager who had the authority to appoint an outpatient triage nurse; or 3) served as a hospital physician with experience appointing outpatient triage nurses.

The initial Delphi round took place in September 2017. The first-round Delphi survey con-

tained 80 triage nurse competencies and asked the experts to evaluate the importance of each item on a 7-point Likert scale (1 = not at all important, 4 = neutral, 7 = extremely important). In the initial round, experts were given the opportunity to suggest any additional items they believed were missing in a free-response text box. The second Delphi round was conducted in October 2017 with a total of 84 items, as 4 items were added because of the experts' suggestions. The final Delphi round occurred in November 2017. On the second and the third rounds, experts were provided with the results from the previous rounds but were not given the option for free-response suggestions.

Statistical Analysis

SPSS Statistics version 23.0 (IBM-Japan, Tokyo, Japan) was used to analyze the results of this study. Univariate analysis was completed to obtain the frequency distribution of the variables. Additional bivariate and multivariate analyses were conducted as appropriate, including a T-test to compare the characteristics of the expert groups according to the inclusion criteria 1–3.

Ethical Considerations

This study was approved by the ethics committee of the Bioethics Review Board of the Graduate School of Medicine and Nagoya University Hospital in Nagoya, Japan (approval number 17-133).

RESULTS

Subject Group Characteristics

A total of 85 experts participated in the Delphi survey. The experts consisted of 69 (81%) outpatient triage nurses (inclusion criterion 1) and 38 (45%) nursing administrators (inclusion criterion 2). In addition, 24 (28%) experts fulfilled both criterion (inclusion criteria 1 and 2) (Table 5). No physicians participated in this study despite efforts to form a diverse panel by inviting members from both the nursing and medical community during the recruiting process.

Identifying Important Competencies

A free-response text box provided for the initial round of Delphi yielded 8 additional items suggested by experts. The primary researchers examined these 8 items closely and identified 4 to be already included in the original 80 competency items in slightly different language use, thus added the rest of the 4 (Table 2: items #81–84) to the list for subsequent Delphi rounds. The second and the third rounds of the Delphi process were completed by November 2017, with participation and attrition rates as reported in Table 5.

Table 5 Responses and Respondents' Characteristics

	1 st Delphi Round	2 nd Delphi Round	3 rd Delphi Round
Number of surveys distributed	131	85	85
Responses	85 (65%)	82 (96%)	79 (93%)
Valid responses	82	74	77
Respondents to 1st Delphi Round (Based on Inclusion Criterion 1–2)	n (%)		
1. Nurse who has at least one year of experience as an outpatient triage nurse	69 (81)		
2. Nursing administrator who has/had the authority to appoint an outpatient triage nurse	38 (45)		
3. Both 1 and 2	24 (28)		

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Most of the competencies earned a mean of 5.0 and above; however, the mean varied from 4.43 to 6.05. The standard deviation (SD) varied widely from 0.52 to 1.16 among items, demonstrating variations in agreement. The mean/SD for items identified as important at the end of the third Delphi round were reported in Table 6.

Table 6 Item Data: Mean, SD, and the Percentage of Experts who Rated the Item ≥ 6

Item #	Mean	SD	percentage rated ≥ 6	Item #	Mean	SD	percentage rated ≥ 6
1	5.71	0.76	61.0	43	5.65	0.62	57.1
2	5.23	0.69	28.6	44	5.87	0.71	70.1
3	6.05	0.87	74.0	45	5.21	0.59	22.1
4	5.92	0.72	79.2	46	5.25	0.63	24.7
5	5.29	0.70	31.2	47	5.35	0.6	33.8
6	5.57	0.79	48.1	48	5.27	0.62	26.0
7	5.68	0.82	59.7	49	5.06	0.71	23.4
8	5.66	0.75	63.6	50	5.1	0.6	19.5
9	5.32	0.82	35.1	51	5.31	0.67	33.8
10	5.23	0.67	29.9	52	5.14	0.58	20.8
11	5.70	0.71	61.0	53	5.27	0.66	27.3
12	5.62	0.74	46.8	54	4.99	0.73	16.9
13	5.36	0.71	33.8	55	5.22	0.68	27.3
14	5.36	0.71	36.4	56	5.01	0.64	14.3
15	5.12	0.58	20.8	57	5.23	0.69	26.0
16	5.23	0.60	27.3	58	5.29	0.69	27.3
17	5.48	0.79	40.3	59	5.7	0.67	63.6
18	5.44	0.80	37.7	60	5.69	0.65	63.6
19	5.16	0.61	19.5	61	5.7	0.69	59.7
20	5.47	0.68	39.0	62	5.42	0.66	35.1
21	5.03	0.63	13.0	63	5.36	0.71	31.2
22	5.16	0.56	19.5	64	5.78	0.7	64.9
23	5.84	0.74	71.4	65	5.82	0.64	68.8
24	5.03	1.04	22.4	66	5.99	0.72	76.6
25	5.35	1.01	36.8	67	5.82	0.62	72.7
26	5.13	0.98	27.6	68	5.52	0.7	45.5
27	5.17	1.16	34.7	69	5.43	0.66	39.0
28	5.27	0.95	35.5	70	5.42	0.66	37.7
29	5.25	1.02	38.2	71	5.36	0.58	33.8
30	5.21	0.91	31.6	72	5.36	0.63	33.8
31	5.23	0.94	28.9	73	5.36	0.65	32.5
32	5.70	1.05	64.5	74	5.38	0.56	33.8
33	5.77	1.01	68.4	75	5.26	0.52	27.3
34	5.25	1.08	36.0	76	4.99	1.03	22.7
35	5.29	0.92	36.8	77	4.96	1.02	20.0
36	5.35	0.91	39.5	78	4.96	1.02	20.0
37	5.51	0.70	41.6	79	4.47	1.07	12.0
38	5.27	0.62	28.6	80	4.43	1.15	10.8
39	5.69	0.61	61.0	81	4.94	1.07	21.3
40	5.70	0.59	63.6	82	4.97	1.05	21.3
41	5.62	0.65	55.8	83	4.9	1.07	17.3
42	5.71	0.60	63.6	84	5.08	1.05	26.7

Table 7 Highly Important Competency Items Based on Expert Majority (>50% rated as≥6)

Item #	Mean/SD	Competency Description
I-A. Ability to Apply Knowledge		
1	5.71/0.76	Demonstrates skills necessary for triage
3	6.05/0.87	Assesses urgency/severity
4	5.92/0.72	Prioritizes patients' needs to a higher level of care
7	5.68/0.82	Recognizes symptoms that require outpatient emergency services
8	5.66/0.75	Performs physical assessments using auscultation, palpation, consultation, and patient
11	5.70/0.71	Listens carefully to ensure consistency in patient statements
23	5.84/0.74	Is knowledgeable about the scope of services available at their institution
32	5.70/1.05	Practices skilled infection control techniques
33	5.77/1.01	Has received training in and demonstrates skilled self-defense as needed
I-B. Developing Interpersonal Relationships		
39	5.69/0.61	Behaves professionally
40	5.70/0.59	Displays proper interpersonal skills
41	5.62/0.65	Communicates emergency needs in a timely manner
42	5.71/0.60	Communicates effectively with multidisciplinary members, families, and service providers in the community
43	5.65/0.62	Asks accurate questions to obtain applicable/relevant information from patients
44	5.87/0.71	Approaches patients with compassionate and considerate manners
II-B. Ethical Practice		
59	5.70/0.67	Accepts any patient who reports to the triage station
60	5.69/0.65	Provides privacy while obtaining a patient's personal information
61	5.70/0.69	Obtains required informed consent prior to guiding a patient to a proposed department
II-C. Professional Relationships and Management		
64	5.78/0.70	Communicates patient information accurately among professional members of the hospital
65	5.82/0.64	Communicates effectively with the medical team to facilitate care
66	5.99/0.72	Recognizes the need to consult appropriate team members in a timely manner to achieve optimal care for every patient
67	5.82/0.60	Delegates tasks to other professional team members as appropriate

The concept of majority rule, widely utilized in policy making and gaining consensus across many specialty fields, was used to identify important competencies. Table 7 presents the twenty-two items that were rated as ≥ 6 by over 50% of the experts.

Differences in Item Ratings Based on the Experts' Characteristics

Two items, item 23, "Is knowledgeable about the scope of services available at their institution," and item 66, "Recognizes the need to consult appropriate team member in a timely manner to achieve the optimal care for every patient" were rated differently with statistical significance (item 23, $p = 0.013$; item 66, $p = 0.048$) based on the expert groups' backgrounds.

The nurse administrator group rated item 23 higher (mean: 6.31) than the triage nurse group rated this item (mean: 5.64) with significant difference ($p = 0.013$). No differences were found when comparisons were made between other expert group combinations. The mean values of all the participating experts' ratings of item 23 in the first, second, and third round were not significantly different (mean: 5.99, 5.91, and 5.81; $p = 0.60$). The SD in the first, second, and third round demonstrated increasing expert agreement as the Delphi process progressed (SD:1.07,

0.863, and 0.745).

For item 66, the expert group that only had triage nurse experience rated this item higher (mean = 6.14) than the group that had both triage nurse and nurse administration experience (mean = 5.68) with statistically significant difference ($p = 0.048$), although not as significantly as the item 23. No differences were found when comparisons were made between other expert group combinations. All other items were rated similarly when analyzed based on the experts' background.

Trends in Agreement Through the Delphi Process

No significant differences in the mean values of each item were observed in any of the Delphi rounds. However, the SD of each item decreased as the Delphi rounds progressed except for items 81–84, which were suggested by the experts in the initial Delphi round and were, therefore, only rated in the second and the third rounds.

Refining Competencies and Identifying Relevant Domains for 21st-Century Japan

The primary researchers carefully refined the competencies once more by merging certain items or rephrasing the descriptions to ensure the language was clear, current, meaningful, practical, useful, and concrete. The researchers also sought consultation from international experts to evaluate the appropriateness of the domain categories according to global standards. The researchers proposed the following four domains as a result of the research:

1. Knowledge Application and Targeted Assessment
2. Interpersonal Skills
3. Professional/Ethical Practice
4. Multidisciplinary/Interprofessional Collaboration

Table 8 displays the organization of the final 22 items according to these domains.

DISCUSSION

Strengths of this Study

An extensive attempt was made to consolidate expert opinions on the essential competencies for outpatient triage nurses in Japanese secondary hospital settings with EMS. To the best of the authors' knowledge, this is the first study in recent Japanese health care history to explore essential competencies for the role of Japanese outpatient triage nurses. More than one-fourth had experience as both a triage nurse and a nurse administrator, adding to the rich background experience of the participating experts. Additionally, the low attrition rate throughout the Delphi process, as reported in Table 5, adds additional value to the findings.

The final list of 22 items reported in Table 8 offers the most comprehensive guide for current health care facility administrators, nurse managers, clinicians, researchers, and educators who are committed to strengthening the gatekeeper/guidepost role at every health care facility. Nurses are positioned and trusted as one of the health care professionals who serve and have close contact with patients in various clinical settings. Therefore, it is fitting that nursing plays a vital role in triage.³¹

Limitations of the Study

Special care was given to recruit a wide variety of experts for this study by sending invitations to Directors of Nursing at 1000 randomly selected Japanese hospitals. However, the potential bias remains, especially given participation was voluntary that results may have been influenced

Table 8 Final 4 Domains and Refined Competencies

Item#	Mean	Domains and Competencies
Knowledge Application and Targeted Assessment		
1	5.71	Demonstrates skills necessary for triage
3/4	6.05/5.92	Recognizes urgency/severity of conditions and transfers patients to a higher level of care if necessary
7	5.68	Recognizes symptoms that require outpatient emergency services
8	5.66	Performs a thorough physical assessment of each system using auscultations, palpations, patient interviews, and consultations with others as needed
11/43	5.70/5.65	Listens carefully to ensure consistency in patient statements and asks accurate and targeted questions to obtain relevant information
23	5.84	Demonstrates in-depth knowledge of the services available at their facility
32	5.70	Practices skilled infection control techniques
33	5.77	Is trained in and demonstrates skilled self-defense as needed
Interpersonal Skills		
39	5.69	Behaves in a professional and appropriate manner at all times
40	5.70	Displays proper interpersonal skills in communicating with patients and families
44	5.87	Demonstrates a compassionate and considerate attitude towards all patients and families
Professional/Ethical Practice		
59	5.70	Accepts every patient who reports to the triage station
60	5.69	Provides privacy while obtaining a patient's personal information
61	5.70	Obtains required informed consent prior to guiding a patient to the proposed department
Multidisciplinary/Interprofessional Collaboration		
41	5.62	Communicates emergency needs to relevant staff members in a timely manner to prevent care delays
42	5.71	Communicates effectively with multidisciplinary staff members, including primary providers or follow-up service providers in the community
64/65	5.78/5.82	Communicates relevant/accurate medical information to medical members of the team to facilitate care coordination that prioritizes needs appropriately
66	5.99	In challenging cases, recognizes the need to consult members of the team in a timely manner to achieve optimal, timely care decisions for every patient
67	5.82	Delegates tasks to appropriate multidisciplinary team members when necessary to achieve efficient, quality triage service

by degrees of individual interest in the topic. Physician recruitment efforts did not result in the inclusion of physician participants on the panel. The authors believe that the impact of the absence of physician participants is ameliorated by the presence of physician colleagues among the consultants and advisors throughout the duration of the study from the design to completion.

The authors' extensive literature search did not identify similar studies on the triage role in a Japanese setting, therefore direct comparisons with other studies were not possible. International publications were extensively researched; however, the unique quality of the Japanese health care system and its particular challenges rendered it difficult to make direct comparisons. However, similarities were noted in the suggestion of priorities in recognition of critical conditions and in collaborating with other professionals in timely manner.

Role-Specific Perceptions

The two items (23 and 66) that were ranked with statistically significant differences may be

explained by the expert groups' background characteristics. Item 23 was rated higher by the nurse administrators compared to the nurses who only had triage nurse experience. Nurse managers in Japan have typically transferred through multiple departments within one facility prior to attaining a managerial position; this may have given nurse managers additional expertise that cause them to emphasize the need to be knowledgeable about the scope of services available at their institution.

Item 66 was rated higher by the experts who only had triage nurse experience compared to those who had both triage nurse and nurse manager experience. This may be a reflection of nurse manager's strong familiarity and comfort with experts within the facility, thus lessening their sense of urgency in needing to know the experts. The statistical differences may not be clinically significant; however, when considering the implementation of educational program development, it is important to recognize and acknowledge how background experience impacts perception.

Outcome Surveillance Needs in Clinical Practice

Surveillance of triage outcomes is essential to ensure continued success. The authors are not certain why quality improvement responsibilities such as items 74–80 (Table 4) to address the surveillance of outcomes were not viewed as important by the experts in this study. The third category of the original conceptual framework of general nursing competency included “ensuring the quality of nursing by utilizing advance quality improvement methods.”³³ Worldwide, quality improvement projects are viewed as essential in continuing to survey healthcare outcomes, and these efforts are often led by nurses.³⁶ These efforts may not have been fully adopted by nursing professionals in Japan as of yet. In the future, quality improvement must become a key competency in every area of nursing, including triage nursing.

Implications for Practice

The implications of this study are significant, as the findings can be used as a foundation for developing training programs or establishing national standards, both of which must be considered urgent needs for Japanese health care given the continued trends of Japanese patients not seeking primary providers before hospital care. Identifying the specific conditions, symptoms, and disease processes and comprehensive pathophysiology content for inclusion in training programs requires further refinement, especially for domain 1.

The triage nurse role is aligned with national policy and may potentially become more valuable even if a successful reduction in direct hospital visits without primary providers' referrals is achieved, especially in light of the new waves of efforts by the Japanese Ministry of Health and Welfare in rethinking how to alleviate the current burden of the physicians' workload (Hatarakikata-kaikaku).³⁷

National health policy debate is increasingly highlighting the need to task-shift various aspects of medical roles to be shared with nursing and other professionals through innovative and systematic training/education.³⁷ Frequently held government committee discussions and published reports on the subject of “Hatarakikata-kaikaku” demonstrate the significance of this matter.³⁸ The national priority today is not necessarily to increase the number of physicians to share the burden, but to effectively alleviate the current demand that is unfairly placed on the Japanese physician workforce, especially at secondary and tertiary facilities that communities rely on. Fortifying a sustainable system for Japan in face of an increasing aging population and dwindling younger population without compromising the quality of care requires innovation.³⁹

Implications for Research

Once national standards are established and a training program is developed, further research will be necessary to examine how the suggested competencies impact current needs in Japan.

Additional considerations are also needed to determine if any adjustments are necessary due to the dynamic nature of the increasingly complex and evolving nature of outpatient health conditions being treated in Japan.

CONCLUSIONS

Through the modified Delphi method, 85 Japanese experts identified 22 important competencies for triage nurses; this is the first Japanese study to recognize the need for relevant competencies and to clarify, define, and organize them. The findings can help drive Japanese health care quality improvement efforts by improving the effective utilization of currently available services and refining the training content for triage nurses with the goal of attaining superior patient outcomes. The importance of nurses' involvement in the ongoing surveillance of outcomes cannot be understated.

The development of a further refined triage nurse role or the implementation of a specifically designed educational program are some of the innovations that can contribute to current national efforts. Specifically, trained nursing professionals who are available to help with vulnerable patients by guiding them to appropriate care effectively, timely, expertly, and professionally, in collaboration with a multidisciplinary expert team, are another foundational pillar that can uphold the safety and quality of the current health care system. Sustainable, high-quality care is the ultimate goal for every health care provider and hospital in Japan.

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REFERENCES

- 1) Ministry of Health, Labour and Welfare. Data summary 2014: patients' rationale behind choices of health care facilities [in Japanese]. <http://www.mhlw.go.jp/toukei/saikin/hw/jyuryo/14/dl/kekka-gaiyo.pdf>. Accessed January 18, 2018.
- 2) Ministry of Health, Labour and Welfare. Data summary 2011: patients' rationale behind choices of health care facilities [in Japanese]. <http://www.mhlw.go.jp/toukei/saikin/hw/jyuryo/11/dl/kekka-gaiyo.pdf>. Accessed January 18, 2018.
- 3) Hori S. Emergency medicine in Japan. *Keio J Med.* 2010;59(4):131–139.
- 4) Shimazaki K. *Health Care in Japan: institutions and policies* [in Japanese]. 1st ed. Tokyo: University of Tokyo Press; 2011.
- 5) Usui M, Yamauchi T. Guiding patients' decision making to select appropriate medical care: survey report from hospitals with EMS in Japan [in Japanese]. *J Jpn Soc for Health Care Manage.* 2016;17(suppl):302.

- 6) Ushiyama S, Yoshino Y, Yamamoto R, Yahagi M. Adopting nurse triage role at outpatient department. Proceedings from the 42nd Japan Society of Nursing [in Japanese]. *Kangokanri*. 2012;42:488–491.
- 7) Sumiyoshi H, Asano E, Numaguchi I, Yahagi M. Analyzing the effectiveness of the use of algorithm-guided triage at outpatient cardiovascular clinic. Proceedings from the 43rd Japan Society of Nursing [in Japanese]. *Kangokanri*. 2013;43:143–146.
- 8) Miyake H, Masuzawa H. DOCTORS: a medical consultation system to support health care of inhabitants through a dialogue with artificial intelligence [in Japanese]. *J Information Processing Management*. 1986;29(4):297–316.
- 9) Hashimoto Y. Legal concerns that impact triage role in healthcare setting [in Japanese]. *Emergency Care*. 2010;23:46–50.
- 10) Ochi S. Nurse expertise needed at the central information at university hospital setting: utilization of nurse with extensive nursing experience to meet the needs [in Japanese]. *J Jpn Acad Nurs Sci*. 2013;8:2–24.
- 11) Toloo GS, Aitken P, Crilly J, FitzGerald G. Agreement between triage category and patient's perception of priority in emergency departments. *Scand J Trauma Resusc Emerg Med*. 2016;24:126.
- 12) Peng L, Hammad K. Current status of emergency department triage in mainland China: a narrative review of the literature. *Nurs Health Sci*. 2014;17:148–158.
- 13) Murdoch J, Varley A, Fletcher E, et al. Implementing telephone triage in general practice: a process evaluation of a cluster randomized controlled trial. *BMC Fam Pract*. 2015;16:47.
- 14) Janssen MAP, Achterberg T, Adriaansen JM, Kampshoff CS, Schalk DMJ, Mintjes-de Groot J. Factors influencing the implementation of guideline triage in emergency departments: a qualitative study. *J Clin Nurs*. 2012;21:437–447.
- 15) Ebrahimi M, Mirhaghi A, Mazlom R, Heydari A, Nassehi A, Jafari M. The role descriptions of triage nurse in emergency department: a Delphi study. *Scientifica*. 2016;2016:5269815.
- 16) Moss EL. “Just a telephone call away”: transforming the nursing profession with telecare and telephone nursing triage. *Nurs Forum*. 2014;49:233–239.
- 17) Acharya RP, Gastmans C, Denier Y. Emergency department triage: an ethical analysis. *BMC Emerg Med*. 2011;11:16.
- 18) Carina E, Bengt F, Margeretha E. On a hidden game board: the patient's first encounter with emergency care at the emergency department. *J Clin Nurs*. 2012;21:2609–2616.
- 19) Gilardi S, Guglielmetti C, Pravettoni G. Interprofessional team dynamics and information flow management in emergency departments. *J Adv Nurs*. 2014;70:1299–1309.
- 20) Kounosu A. Development and utilization of a training system for a triage nurse role [in Japanese]. *Kangogijutsu*. 2011;57(2):69–72.
- 21) Watanabe T. Skills and knowledge required for a triage nurse role [in Japanese]. *Nursing Today*. 2011; 2:18–20.
- 22) Dousaka H. Challenges for nurses who assume a triage nurse role [in Japanese]. *Emerg Care*. 2005;18:542–547.
- 23) Noda T. Study of all-round guidance for outpatients [in Japanese]. *JHAC*. 2006;11:41–46.
- 24) Suzuki K, Nakamura K, Anbo H, Hayasaka Y, Yamaguchi C, Watanabe Y. Present conditions of triage in emergency outpatient clinic by nurses [in Japanese]. *J Jpn Soc Emerg Med*. 2010;13:626–631.
- 25) Japanese Association for Emergency Nursing. *Nurse Triage Textbook* [in Japanese]. 1st ed. Tokyo: Herusu Shuppan; 2012.
- 26) Zimmermann PG, Herr R, Unoki K. *Triage Nursing Handbook* [in Japanese]. Tokyo: Elsevier; 2007.
- 27) Shirakawa Y. Emergency Nursing: *Quick-review-questionnaire Useful for Tele-triage* [in Japanese]. Kyoto: Kinhoudou; 2010.
- 28) Hirao A. *Nurse Triage* [in Japanese]. Tokyo: Nakayama Shoten; 2012.
- 29) Briggs J. *Telephone Triage Protocols for Nurses*. 5th ed. Philadelphia, PA: Walters Kluwer; 2015.
- 30) Grossman VGA. *Quick Reference to Triage*. Philadelphia, PA: Lippincott Williams and Wilkins; 1999.
- 31) Japan Primary Care Association. *Foundation of Nursing: Entry Level* [in Japanese]. Tokyo: Nanzando; 2016.
- 32) Nederlands Huisartsen Genootschap. *NHG Triage Guide* [in Dutch]. Utrecht, Nederland: Nederlands Huisartsen Genootschap; 2014.
- 33) Matsutani M, Miura Y, Harabayashi Y, et al. Nursing competency: concept, structure of dimensions, and assessment [in Japanese]. *J St. Luke's Society Nurs Research*. 2010;14:18–28.
- 34) Mokkink LB, Terwee CB, Knol DL, et al. The COSMIN checklist for evaluating the methodological quality of studies on measurement properties: a clarification of its content. *BMC Med Res Methodol*. 2010;10:22.
- 35) Hsu C, Sandford BA. The Delphi technique: making sense of consensus. *Pract assess, res eval*. 2007; 12(10):1–8.

- 36) Agency for Healthcare Research and Quality. Agency for Healthcare Research and Quality: a profile. <https://www.ahrq.gov/cpi/about/profile/index.html>. Updated May 2016. Accessed September 12, 2018.
- 37) Ministry of Health, Labour and Welfare. The physician's "Hatarakikata-kaikaku" committee hearings [in Japanese]. https://www.mhlw.go.jp/stf/shingi/other-isei_469190.html. Accessed September 20, 2018.
- 38) Ministry of Health, Labour and Welfare. Hearing summary. The 16th "Hatarakikata-kaikaku" hearing/meeting [in Japanese]. January 11, 2019. <https://www.mhlw.go.jp/content/10800000/000467707.pdf>. Accessed January 14, 2019.
- 39) Ministry of Health, Labour and Welfare. The approach to the future policy to control over-time workload. The 16th "Hatarakikata-kaikaku" hearing/meeting. January 11, 2019 [in Japanese]. <https://www.mhlw.go.jp/content/10800000/000467710.pdf>. Accessed January 14, 2019.