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RESEARCH ARTICLE (ORIGINAL) &

# Nurse Training for Disaster Preparedness: A Comparative Analysis of Core Competencies Standards

Capacitação do Enfermeiro em Catástrofe: Análise Comparativa de Matrizes de

Capacitación del Enfermero en Catástrofes: Análisis Comparativo de Matrices de Competencias.

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#### Abstract

Background: Knowledge of nursing competencies for emergency and disaster situations is crucial for ensuring an appropriate response. Although evidence highlights the need for objective regulation, some argue that the Regulation on the Competencies Framework for Generalist Nurses in Portugal already encompasses the skills necessary for effective intervention.

Objective: To identify the relationships between the competency domains and criteria outlined in the Portuguese Regulation on the Competencies Framework for Generalist Nurses and those in the ICN Core Competencies in Disaster Nursing, version 2.0.

**Methodology:** An exploratory, cross-sectional study using a qualitative approach.

Results: A weak relationship was found between the Portuguese Regulation on the Competencies Framework for Generalist Nurses and the Preparation and Planning, Incident Management, Safety and Security, and Assessment domains of the International Council of Nurses (ICN) Core Competencies in Disaster Nursing, version 2.0. On the other hand, a stronger alignment was observed with the Communication, Intervention, and Law and Ethics domains.

Conclusion: The competency domains and criteria of the Portuguese Regulation on the Competencies Framework for Generalist Nurses are insufficient for responding adequately to emergency and disaster situations.

Keywords: education, nursing; education in disasters; nursing competency; liability, legal

Enquadramento: A consciência do enfermeiro sobre as suas competências em situações de emergência e de catástrofes é determinante para uma resposta adequada. A evidência aponta para a necessidade de regulamentação objetiva. Contudo, defende-se que o Regulamento do Perfil de Competências do Enfermeiro de Cuidados Gerais possibilita aptidões que sustentam uma intervenção eficaz.

Objetivo: Identificar, a partir dos domínios e critérios de competências do Regulamento do Perfil de Competências do Enfermeiro de Cuidados Gerais, relações com os domínios e critérios de competência do International Council of Nurses (ICN) - Core Competencies in Disaster Nursing, version 2.0. **Metodologia:** Estudo exploratório, transversal, com abordagem qualitativa.

Resultados: Observaram-se menos relações com os domínios de competência do ICN - Core Competencies in Disaster Nursing, version 2.0., na Preparação e Planeamento, Gestão de Incidentes, Segurança e Proteção e Avaliação. Em contrapartida, os domínios da Comunicação, Intervenção e Direito e Ética, apresentam relações mais consistentes.

Conclusão: Os domínios e critérios de competência do Regulamento de Exercício Profissional do Enfermeiro, são insuficientes no alcance deste propósito.

Palavras-chave: educação em enfermagem; educação em desastres; competência do enfermeiro; responsabilidade legal

#### Resumen

Marco contextual: La conciencia del enfermero sobre sus competencias en situaciones de emergencia y catástrofes es determinante para una respuesta adecuada. Las pruebas apuntan a la necesidad de una regulación objetiva. Sin embargo, se defiende que el Reglamento sobre el Perfil de Competencias del Enfermero de Cuidados Generales permite adquirir aptitudes que favorecen una intervención eficaz. **Objetivo:** Identificar, a partir de los dominios y criterios de competencias del Reglamento del Perfil de Competencias del Enfermero de Cuidados Generales, las relaciones con los dominios y criterios de competencia del *International Council of Nurses (ICN) - Core Competencies in Disaster Nursing*,

Metodología: Estudio exploratorio, transversal, con enfoque cualitativo.

Resultados: Se observaron menos relaciones con los dominios de competencia del ICN - Core Competencies in Disaster Nursing, version 2.0., Preparación y Planificación, Gestión de Incidentes, Seguridad y Protección y Evaluación. Por el contrario, los dominios de Comunicación, Intervención y Derecho y Ética presentan relaciones más consistentes.

Conclusión: Los dominios y criterios de competencia del Reglamento sobre el Ejercicio Profesional del Enfermero son insuficientes para alcanzar este objetivo.

Palabras clave: educación en enfermería; educación en desastres; competencia del enfermeiro; res-



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## Introduction

The increasing frequency of devastating events resulting from climate change and human activity, which have profound human, environmental, social, and economic impacts, has prompted international nursing organizations to emphasize the need for strategies for training nurses in disaster preparedness. Organizations such as the National Academies of Sciences, Engineering, and Medicine; National Academy of Medicine; Committee on the Future of Nursing 2020–2030 and the International Council of Nurses (ICN, 2019), through the ICN Core Competencies in Disaster Nursing (ICN-CCDN), Version 2.0, emphasize the importance of preparing nurses to effectively intervene across the four main phases of the disaster management cycle. As the largest professional group within most healthcare systems, nurses are pivotal in anticipating, responding to, and recovering from such events (American Nurses Association, 2017). The ICN Core Competencies in Disaster Nursing: Competencies for Nurses Involved in Emergency Medical Teams (ICN, 2013) distinguishes nurses' levels of performance and their ability to assess such phenomena. It defines three levels of professional proficiency: Level I is for recent graduates; Level II is for nurses with disaster-related training who are part of an organization's response team; and Level III is for nurses who are considered proficient in the area. Several countries, including Australia, Turkey, the United States of America, and Japan have integrated disaster preparedness into undergraduate nursing curricula, and it is recognized as a specialized area of nursing practice in the United States of America, Japan, China, the United Kingdom, and Italy (Erkin & Kiyan, 2025).

In Portugal, however, the absence of defined competency criteria — the key elements demonstrating competent professional performance — has hindered clarity regarding generalist nurses' responsibilities in disaster management (Santos et al., 2022, 2024). The process of establishing these competencies has not reached a national consensus (Ordem dos Enfermeiros, 2011). According to Santos et al. (2021), the current Portuguese Regulation on the Competencies Framework for Generalist Nurses (RPCE-CG) is reductive, restricting differentiation and the definition of the disciplinary trajectory in this field (Ordem dos Enfermeiros, 2011). Consequently, national-level opinions diverge. Some argue that the RPCECG already encompasses the necessary skills for effective intervention in disaster situations, while others advocate for the development of objective regulatory criteria to guide generalist nurses' competencies. As Santos (2021, p. 121) notes, such regulation should function as "a guiding standard, whose construction process implies objectivity, continuity, and interdependence between what is determined at the normative, real, or teaching-learning levels."

In their study, Santos et al. (2024) used a Delphi panel to identify seven competency domains and 16 criteria from the ICN-CCDN, Version 2.0. These criteria are considered relevant and appropriate for the participatory and effective involvement of generalist nurses in disaster situations. This study aimed to identify the relationships

between these seven competency domains and 16 criteria defined by Santos et al. (2024) and the RPCECG competency domains and criteria.

## Background

It is essential to understand the differences between "emergency" and "disaster." According to the 2009 UNISDR Terminology on Disaster Risk Reduction issued by the United Nations Office for Disaster Risk Reduction (UN-DRR, 2009), an "emergency" is a threatening situation that requires immediate action. In practice, the term reflects the need to take appropriate and proportionate measures to prevent the escalation of actual or potential danger. In contrast, a "disaster" is defined as "a serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts" (UNISDR, 2020, p. 9). Both concepts imply a disruption of normal social functioning, along with ecosystem destruction and numerous victims.

## Research question

Which competency domains and criteria of the RPCE-CG align with the seven competency domains and 16 criteria of the ICN-CCDN, which reached consensus in the study by Santos et al. (2024)?

# Methodology

This study employed an exploratory, cross-sectional design with a qualitative approach. Two online focus groups were conducted via Microsoft Teams®. Each session lasted two hours and took place between November and December 2022. Five nursing educators participated, while one withdrew after expressing interest in doing so. The focus group technique was selected because it enables structured discussion and helps participants share and clarify their thoughts. Rather than coming up individually, the results come from group discussions about a specific topic, creating new knowledge (Tümen & Ahmed, 2021).

Considering that undergraduate nursing curricula are based on the competencies outlined in the RPCECG, purposive sampling was used to select a group of six nursing educators with experience in developing undergraduate nursing study plans and in emergency and disaster situations. This diversity of expertise allowed for an objective exploration of this area of knowledge and the current RPCECG competencies, as well as the identification of any correlations between them.

For data collection, a questionnaire was developed with three thematic blocks. The first block provided an introduction to the study. The second block addressed sociodemographic variables (Table 1).

 Table 1

 Sociodemographic characterization of the participants

	$ar{X}$	Md	Мо	σ	Xmin.	Xmax.
Age	54.2	55.00	42	7.662	42	63
Years of teaching experience	21.00	21.00	21	4.658	5	34
				No.	(	%
Gender	Female			5	10	0.0
Academic qualifications	Doctoral degree			3	60	0.0
	Master's degree			2	40	0.0
Specialization area	Medical-surgical nursing			4	80	0.0
	Community nursing			1	20	0.0

 $Nota. \ \bar{X} = Mean; \ Md = Median; \ Mo = Mode; \ \sigma = Standard Error; \ Xmin. = Minimum Value; \ Xmax. = Maximum Value.$ 

The third block consisted of a two-column table: the first column listed the seven competency domains and 16 criteria of the ICN-CCDN established by consensus, and the second column listed the 96 current RPCECG competency criteria. To ensure the adequacy of the data collection instrument, a pre-test was conducted with four eligible participants. This process allowed assessing the clarity of the terminology used, how comprehensible the questions were, and how relevant they were to the study objective.

Initially, an interview was conducted to provide information and answer questions from participants. Subsequently, an email was sent with the informed consent form and questionnaire to ensure the confidentiality of the information shared by the participants and to provide them with the option to withdraw from the study at any time. The study received a favorable opinion from the Ethics Committee of the Health Sciences Research Unit: Nursing at the Nursing School of Coimbra (Opinion no. 815/11-2021).

After receiving the completed questionnaires, the interviews were conducted and audio-recorded. Content analysis was carried out to categorize and code the data.

When defining and constructing the category system, the principles of exhaustiveness, exclusivity, representativeness, homogeneity, and productivity were considered (Bardin, 2016). Transcripts were returned to participants for comments and/or corrections. A script with introductory questions was prepared for each session to assist the researcher in conducting the focus groups. The main goal was to obtain answers through discussion, explore the topic, and generate new insights. Two focus group sessions were deemed sufficient because, by the second meeting, it was clear that the conversations had become redundant. The COnsolidated criteria for REporting Qualitative research (COREQ) checklist was applied to increase the rigor and quality of the study (Tong et al., 2007).

## Results

The collected data indicate that the current RPCECG (pp. 11–24) includes domains and competency criteria that align with the seven competency domains and 16 criteria of the ICN-CCDN (Table 2).

Table 2

Alignment between the RPCECG competency domains and criteria and the competency domains and criteria of the ICN-CCDN that achieved consensus

ICN-CCDN	RPCECG		
Domain: Preparation and Planning	Domain: Care Provision and Management		
Competency Criteria	Competency Criteria		
Participates with other disciplines in drills/exercises in the workplace.	B1-31 – Understands emergency plans for disaster situations. B2-33 – Collaborates with other professionals and communities. B2-39 – Understands traditional practices and belief systems regarding the health of individuals, families, or communities. B3-56 – Responds effectively in unexpected or rapidly changing situations. B3-57 – Responds effectively in emergency or disaster situations. B6-73 – Applies knowledge of effective interprofessional work practices.		

Doma	in: Communication	Domains: Professional, Ethical, and Legal Responsibility / Care Delivery and Management
Comp	petency Criteria	Competency Criteria
<ol> <li>Communicates disaster-related priority information promptly, with respect to their nursing area of expertise, to designated individuals</li> <li>Demonstrates basic crisis communication skills during emergency/disaster events (including the use of available multi-lingual resources such as interpreters, sign language, signs, and pic-</li> </ol>		A2-9 – Ensures the confidentiality and protection of written and oral information acquired in a professional capacity.  B2-38 – Provides relevant health information to support individuals, families, and communities in achieving optimal health and rehabilitation.  B4-62 – Consistently communicates relevant, accurate, and understandable health information about patients orally, in writing, and electronically within their area of competency.  B6-73 – Applies knowledge of effective interprofessional work practices.  B6-75 – Contributes to effective multidisciplinary teamwork by maintaining collaborative relationships.
Doma	in: Incident Management	Domain: Care Delivery and Management/ Care Delivery and Management
Comp	petency Criteria	Competency Criteria
4.	Uses specific disaster plan, including chain of command for their place of education or employment in an event, exercise or drill.	B1-31 – Understands emergency plans for disaster situations. B3-56 – Responds effectively in unexpected or rapidly changing situations.
Com	petency Criteria	Competency Criteria
5.	Maintains professional practice with- in licensed scope of practice when as- signed to an interprofessional team or an unfamiliar location.	A1-2 – Recognizes the limits of their role and expertise. B2-33 – Collaborates with other professionals and communities. B6-74 – Establishes and maintains constructive working relationships with nurses and other team members. B6-75 – Contributes to effective multidisciplinary teamwork by maintaining collaborative relationships. B6-76 – Values the roles and abilities of all members of the health and social care team. B6-77 – Participates with members of the health care team in decision-making regarding the patient.
Doma	in: Safety and Security	Domain: Care Provision and Management / Professional, Ethical, and Legal Responsibility
Comp	petency Criteria	Competency Criteria
6.	Ensures personal safety and for others throughout disaster/ emergency events even in both usual or austere environments.	A2-13 – Identifies risk practices and takes appropriate measures. B5-68 – Creates and maintains a safe care environment through quality assurance and risk-management strategies.
Com	petency Criteria	Competency Criteria
7.	Adapts basic infection control practices to the available resources.	B5-71 – Implements infection-control procedures.
Com	petency Criteria	Competency Criteria
8.	Uses personal protective equipment (PPE) as directed through the chain of command.	B5-71 – Implements infection-control procedures.
Com	petency Criteria	Competency Criteria
9.	Reports possible risks to personal and others' safety and security.	B5-72 – Records and reports safety concerns to the appropriate authority. B5-69 – Uses appropriate assessment tools to identify actual and potential risks.
Doma	in: Assessment	Domain: Care Delivery and Management
Comp	petency Criteria	Competency Criteria
10.	Reports symptoms or events that might indicate the onset of an emergency in assigned patients/families/communities.	B1-30 – Appropriately interprets objective and subjective data and their implications for safe care delivery. B3-56 – Responds effectively in unexpected or rapidly changing situations.

Competency Criteria	Competency Criteria
11. Maintains ongoing assessments of assigned patients/families/communities for need changes in care, in response to the evolving disaster event.	B3-46 – Formulates a care plan, whenever possible, in collaboration with patients and/or caregivers. B3-47 – Consults relevant members of the health and social care team. B3-49 – Establishes priorities for care, whenever possible, in collaboration with patients and/or caregivers. B4-62 – Consistently communicates relevant, accurate, and understandable information about patients' health status orally, in writing, and electronically, within their area of competence. B4-63 – Ensures that information given to patients and/or caregivers is presented in an appropriate and clear manner. B4-64 – Responds appropriately to questions, requests, and problems from patients and/or caregivers, within their area of competence.
Domain: Intervention	Domain: Care Delivery and Management / Professional Development
Competency Criteria	Competency Criteria
12. Implements basic first aid, needed by individuals in immediate vicinity.	B1-24 – Assesses and makes informed decisions, regardless of the care-delivery context.
Competency Criteria	Competency Criteria
13. Isolates individuals/families/clusters at risk of spreading communicable conditions to others.	B2-35 – Participates in health-promotion and disease-prevention initiatives, contributing to their evaluation. B5-68 – Creates and maintains a safe care environment through quality assurance and risk-management strategies. B5-69 – Uses appropriate assessment tools to identify actual and potential risks. B5-71 – Implements infection-control procedures. B5-72 – Records and reports safety concerns to the appropriate authority.
Competency Criteria	Competency Criteria
14. Provides patient care based on priority needs and available resources.	B1-26 – Organizes work and manages time effectively.  B3-46 – Formulates a care plan, whenever possible, in collaboration with patients and/or caregivers.  B3-49 – Sets priorities for care, whenever possible, in collaboration with patients and/or caregivers.  B3-50 – Identifies expected outcomes and timeframes for achieving and/or reviewing them, in collaboration with patients and/or caregivers.  B3-53 – Implements planned nursing care to achieve expected outcomes.  B7-80 – Delegates activities commensurate with others' abilities and scope of practice.  B7-81 – Uses a range of support strategies when supervising aspects of care delegated to others.  C3-91 – Conducts regular reviews of personal practice.
Competency Criteria	Competency Criteria
15. Participates in surge capacity activities as assigned (e.g., mass immunization).	B1-28 – Acts as a resource for individuals, families, and communities facing challenges posed by health, disability, and death. B3-56 – Responds effectively in unexpected or rapidly changing situations.
Domain: Law and Ethics	Domain: Professional, Ethical, and Legal Responsibility
16. Demonstrates an understanding of ethical practice during disaster response that is based on utilitarian principles (prioritizing actions that maximize the well-being of the greatest possible number of people over those favoring individual needs).	A1-2 – Recognizes the limits of their role and expertise. A2-5 – Practices in accordance with the Code of Ethics. A2-6 – Engages effectively in ethical decision-making. A2-7 – Acts in defense of human rights, as described in the Code of Ethics. A2-9 – Ensures the confidentiality and protection of written and oral information acquired in a professional capacity. A2-15 – Respects the values, customs, spiritual beliefs, and practices of individuals and groups. A2-16 – Provides culturally congruent care. A2-18 – Practices in accordance with national and local policies and standards, provided they do not conflict with the Nursing Code of Ethics. A2-19 – Recognizes and acts in situations of infringement or violation of the law and/or the Nursing Code of Ethics.

Source: Ordem dos Enfermeiros (Regulamento do perfil de competências do enfermeiro de cuidados gerais, 2011, pp. 11-24).



## Discussion

After analyzing the results, relationships were found between some RPCECG competency domains and criteria and the seven competency domains and 16 criteria of the ICN-CCDN as identified in the study by Santos et al. (2024). However, a closer examination shows that some RPCECG competency domains provide an overly broad view of the expected functions of generalist nurses in emergency or disaster situations. While these domains align with the ICN-CCDN, they do not incorporate the necessary knowledge, skills, and attitudes for nurses to fully achieve the defined competencies. For instance, regarding the ICN-CCDN Incident Management domain, the competency criterion "Uses specific disaster plan, including chain of command for their place of education or employment in an event, exercise or drill" is supported by two RPCECG competency criteria. Nevertheless, undergraduate nursing curricula in this area remain insufficient (Santos et al., 2024). Activating an emergency plan involves more than following established procedures or instructions from a chain of command. Implementing all provisions of an emergency plan requires nurses to develop multiple competencies, including the ability to collaborate with trans- and multidisciplinary teams and to demonstrate cognitive flexibility, enabling nurses to adapt interventions to dynamic contexts. Similarly, responding to unexpected, highly complex, and ambiguous situations under time pressure demands advanced skills, such as adaptability and the ability to continuously restructure anticipation and self-organize in adverse scenarios (Santos Rabiais et al., 2022).

The same applies to ICN-CCDN domains that align more closely with the RPCECG competency criteria. A notable example is the Law and Ethics domain. In emergency or disaster situations, applying moral principles and rules is not always straightforward, requiring nurses to adapt these principles in practice. This requires knowledge of preventive ethics. For instance, triage processes in hostile environments often differ from standard practice. When decisions are based on survival criteria and limited rescue resources, nurses must be able to interpret, discriminate, evaluate, recognize, and manage their emotions. These competencies enable self-control and motivation when fulfilling professional responsibilities. Another example is the allocation and distribution of limited resources, where nurses may face dilemmas between efficiency and equity, which complicates their decision-making. Training is therefore essential to enable nurses to autonomously navigate these situations and select the most effective course of action (Santos & Serafim, 2020).

This aligns with literature emphasizing the need for adequate regulations and processes to objectively evaluate the skills and knowledge necessary for generalist nurses to respond effectively in emergency or disaster situations (Santos et al., 2022). Training is indispensable for building new knowledge and developing skills, which empower nurses and validate their importance and interventions in these contexts. Ultimately, training improves the quality of care (Santos et al., 2024). However, assuming that

generalist nurses are functionally versatile and possess the qualifications required to efficiently provide care across a broad range of contexts, including emergency or disaster scenarios, is misguided. Effective intervention in such scenarios requires a clear understanding of responsibilities and the scope of practice. While the RPCECG contributes to this understanding, it does not provide nurses with the comprehensive knowledge necessary for an appropriate response.

## Conclusion

Despite associations with the ICN-CCDN competency domains and criteria, the current RPCECG competency domains and criteria are insufficient to ensure effective nursing intervention in emergency and disaster situations. The challenges of intervening in these environments differ from those of providing nursing care in conventional circumstances. This training should therefore cover the essential knowledge for these contexts, providing a logical basis for reflection and efficient and effective decision-making in these environments. The notion that generalist nurses are "effectively" trained to deal with such situations requires a change in mindset.

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