

Current status and actions needed for disseminating medical information to the public at National Centers in Japan

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Abstract: Providing reliable medical information *via* the Internet is a pivotal mission for the National Centers (NCs) in Japan. This paper reports on the current state of medical information dissemination *via* the Internet and the management systems at eight departments across six NCs, and explores strategies for optimizing their services of information delivery. We investigated these departments' establishment backgrounds, website content, quality control measures, and dissemination challenges. The rationale for establishing the departments and the types of medical information disseminated varied across the NCs. Regarding information quality control, most departments relied on reference materials with robust supporting evidence, with medical professionals—such as physicians, pharmacists, nurses, and individuals with PhDs—playing a central role in content preparation. However, only three departments had established editorial policies, and just one had a system for incorporating public peer review. The key factors in effective information dissemination, as perceived by practitioners, include identifying the public's needs and fostering accessible information environments. Challenges identified included a shortage of human resources for information development and difficulties adapting to the increasing diversification of information dissemination platforms, such as social media. Although all NCs leverage their specialized expertise to provide information, there is a lack of standardization in the quality control processes. To improve the reliability and accessibility of medical information, it is essential to establish standardized quality control processes, integrate public perspectives into content creation, secure dedicated personnel, and strengthen cross-NC collaboration, particularly in the era of social media and generative AI.

Keywords: information dissemination, quality control, internet, public health communication, national center

1. Introduction

Japan has established the Japan Institute for Health Security (JIHS) and five National Centers for Advanced and Specialized Medical Care and Health Security. National Centers (NCs) include the National Cancer Center Japan (NCCJ), National Cerebral and Cardiovascular Center (NCVC), National Center of Neurology and Psychiatry (NCNP), National Center

for Child Health and Development (NCCHD), and National Center for Geriatrics and Gerontology (NCGG). Together, these six institutions, collectively referred to as the six NCs (1), address specific disease areas aligned with national health policies and play a crucial role in advancing public health through research, medical technology development, specialized medical care, training for healthcare professionals (2,3) and the dissemination of evidence-based medical information

to the public (4). In particular, the role of the NCs in disseminating reliable medical information has become increasingly important in shaping public understanding and health-related decision-making, and each NC has independently engaged in information provision, primarily through its website.

With the rapid expansion of the internet and the advent of generative artificial intelligence, the overwhelming volume of online information has become a pressing societal concern. Medical information warrants particular attention, as it significantly influences health-related decisions and treatment choices (5). In the United States, fewer than 40% of individuals report accessing health information without frustration (6), and in Japan, fewer than half consider themselves capable of assessing its reliability (7). The general public, lacking medical expertise, often has difficulty evaluating the quality of this vast amount of information, determining its accuracy, and applying it effectively. To address these concerns, the information dissemination departments of the six NCs have been holding liaison meetings since 2021 to share their experiences in disseminating information to the public and to facilitate dialogue. Through these discussions, a consensus has emerged on the urgent need to enhance the infrastructure for delivering accurate medical information to the public and promoting its appropriate use.

Assessing each center's independent information dissemination efforts is essential for establishing a collaborative foundation for cross-specialty medical information dissemination among Japan's NCs; however, systematic data on these activities are currently lacking. This paper reports on the current status of medical information dissemination to the public *via* the Internet, examines the organizational structures of NCs responsible for these activities, and explores optimal strategies for improving information provision while addressing key challenges faced by the NCs. In this paper, the term 'NCs' is used to refer to these six institutions. Although JIHS transitioned out of the traditional NC system in April 2025, we use the term 'NCs' in a broader definition that emphasizes their unified role in national health security (1) and the organizational framework at the time of our survey.

2. Data collection and analysis

In April 2024, we conducted an email-based questionnaire survey of eight medical information dissemination departments across the six NCs. The survey aimed to assess the content and quality control measures of the medical information provided through their websites, identify key priorities for information dissemination, and explore perceived challenges.

We analyzed the collected responses using qualitative content analysis to summarize the background of each NC's medical information dissemination department, the

types of medical information disseminated to the public, the processes for creating content, editorial policies, and quality control. In addition, we categorized responses regarding the challenges of information dissemination and identified key issues to optimize these activities.

Ethical approval was not required because this survey collected institutional-level information provided by designated representatives of each organization and did not involve patient data or identifiable personal information.

3. Establishment backgrounds of the medical information dissemination departments and overview of public information provision

The rationales for establishing medical information dissemination departments in the NCs varied. We classified them into four categories: (A) departments established in response to the enactment of action plans, or other regulatory measures; (B) those developed as a fusion of national initiatives and the NCs' own initiatives (not directly stemming from policy measures); (C) those created in the wake of disasters; and (D) those developed as unique NC initiatives.

The duration of information provision varied from 7 to 20 years, depending on factors such as the timing of regulatory implementation, the occurrence of disasters, and the independent implementation of measures (Figure 1). This section summarizes the backgrounds of the establishment of medical information dissemination departments at each center. The purpose and overview of providing information to the public, as well as the number of page views based on the established background, are shown in Table 1.

3.1. Established in response to action plans by the Ministry of Health, Labour, and Welfare

This category includes the NCCJ's Cancer Information Service (8), the JIHS's Hepatitis Information Center (9), the JIHS's Diabetes and Metabolism Information Center (10), and the JIHS's Antimicrobial Resistance (AMR) Clinical Reference Center (11).

NCCJ: Cancer Information Service

In 2005, the Ministry of Health, Labour, and Welfare (MHLW) developed the Cancer Control Headquarter in order to promote multidisciplinary activity for comprehensive cancer control, and launched the Action Plan 2005 for Promotion of Cancer Control (12,13). This indicated the need to provide information to patients and their families, leading to the establishment of the Cancer Control Information Center (now the Institute for Cancer Control). In October 2006, the "Cancer Information Service" website began providing information on cancer and its treatment to patients and their families.

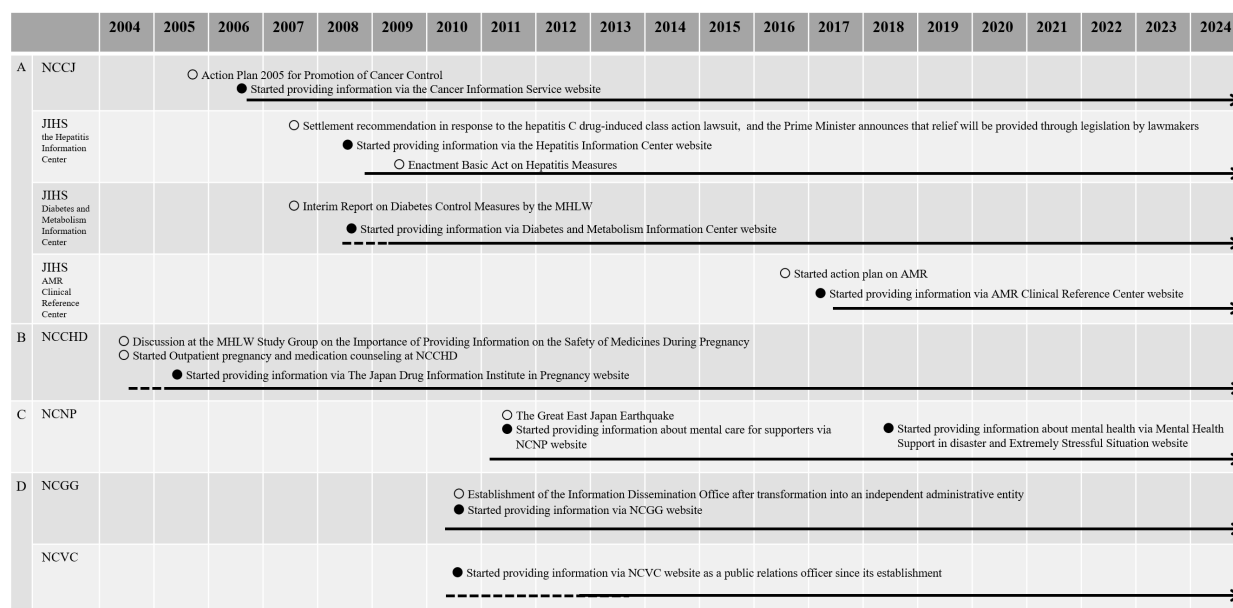


Figure 1. History of the establishment of the Medical Information Dissemination Department. Notes: ○: Events that are the trigger or basis for the information. ●: When to start providing information. Abbreviations: AMR, Antimicrobial Resistance; JIHS, Japan Institute for Health Security; MHLW, the Ministry of Health, Labour, and Welfare; NC, National Center; NCCJ, National Cancer Center Japan; NCCHD, National Center for Child Health and Development; NCGG, National Center for Geriatrics and Gerontology; NCNP, National Center of Neurology and Psychiatry; NCVC, National Cerebral and Cardiovascular Center.

JIHS: Hepatitis Information Center

The Hepatitis Information Center was established in 2008 to promote the standardization of hepatitis care and to further improve the medical standard nationwide. The Center collaborates with a total of 72 Regional core centers in 47 prefectures throughout Japan. The Center is in charge of accomplishing three important missions: *i*) to provide information on hepatitis care, *ii*) to facilitate information sharing among the regional core centers, and *iii*) to train medical staff, hepatitis medical care coordinators, and counselors who are involved in hepatitis care. The main mission of the center had been reviewed in 2016 to work closely with the regional core centers, strengthen the full network for liver disease care, and make recommendations regarding hepatitis care based on their activities.

JIHS: Diabetes and Metabolism Information Center

In 2007, MHLW issued the "Interim Report on Diabetes Countermeasures", which emphasized information dissemination. In 2008, the Diabetes Information Center was established within the JIHS to provide information on diabetes pathology, diagnosis, and treatment.

JIHS: AMR Clinical Reference Center

In 2016, the Japanese government formulated a national action plan for AMR. In April 2017, the AMR Clinical Reference Center was established within the JIHS to provide information. In September 2017, a public information website was launched, providing information

on infectious diseases and drug-resistant organisms.

3.2. Developed from a combination of MHLW initiatives and NC initiatives

NCCHD: The Japan Drug Information Institute in Pregnancy

The Japan Drug Information Institute in Pregnancy (14), part of the NCCHD, is classified in this category. In 2005, the MHLW discussed the importance of providing drug safety information during pregnancy. Although the NCCHD had already started an outpatient pregnancy and drug counseling service in 2003, its efforts coincided with the MHLW's initiative, leading to the establishment of the institute in October 2005. Since then, the NCCHD has provided information on medications administered during pregnancy and lactation.

3.3. Developed in the wake of disasters

NCNP: Mental Health Support during Disasters and Extremely Stressful Situations

Mental Health Support during disasters and Extremely Stressful Situations at the NCNP (15) falls into this category. Between March and November 2011, following the Great East Japan Earthquake, the NCNP launched and maintained the Tohoku Mental Health Information page on its website. This platform provided guidelines, manuals, activity tools, brochures, and links to related websites to support mental health care providers. In

Table 1. The purpose and outline of information provided by National Centers

Category/NC	Purpose of providing information/ outline of information provided	PV/month
A		
NCCJ	<Purpose> To provide the public with reliable, easy-to-understand, and useful cancer information to support better decision-making by encouraging patients, families, and others to seek further information and take the following actions. <Outline> Different types of cancer, treatment, daily life, medical care, hospitals, cancer statistics, and local cancer-related activities.	4,000,000
JIHS the Hepatitis Information Center	<Purpose> To widely disseminate accurate information to further promote the equalization of hepatitis treatment and the improvement of medical standards nationwide, as the role of the Hepatitis Information Center in accordance with the Basic Act on Hepatitis Measures and the Basic Guidelines. <Outline> Liver diseases, hepatitis viruses, various subsidy programs, information on medical institutions that commission hepatitis virus tests and medical specialists.	390,000
JIHS Diabetes and Metabolism Information Center	<Purpose> To provide evidence-based information to the public and healthcare professionals in order to prevent the development of diabetes and its complications. <Outline> Diabetes, lifestyle and medical care, medical institutions, and statistics.	400,000
JIHS AMR Clinical Reference Center	<Purpose> To provide the public with information on drug resistance, its countermeasures, and the proper use of antimicrobial agents in accordance with the Action Plan for Counteracting Drug Resistance (AMR) formulated by the government. <Outline> Basic knowledge about drug resistance, the difference between bacteria and viruses and antimicrobial agents, efforts based on the Action Plan for AMR Countermeasures (introducing examples of efforts in various parts of Japan), and the publication and provision of educational materials.	110,000
B		
NCCHD	<Purpose> To provide information on the procedures for consultation with the Japan Drug Information Institute, as well as information on lactation and medications. <Outline> Since most of the specific information on pregnancy and medications is sensitive, the content provided is very brief and the website serves as an entry point for consultation.	180,000
C		
NCNP	<Purpose> To provide mental health care, research, training, and support in the context of disasters. <Outline> About mental health care, research, training, and support related to disasters, a website was created to disseminate information and provide guidelines, manuals, activity tools, brochures, and other information related to mental health care for support.	6,000*
D		
NCGG	<Purpose> • Dementia Portal: To provide information to the public by consolidating dementia-related information disseminated by the NCGG. • Health and Longevity Navigator: To provide easy-to-understand explanations of the symptoms that are of concern as aging. • The Integrative Medicine Information Site: To provide information on the safety and efficacy of various therapies that can be combined with modern Western medicine, whether effective or not, and that are currently available. <Outline> • Dementia Portal: A collection of frequently asked questions about dementia and points to consider when caring for a person with dementia, <i>etc.</i> • Health and Longevity Navigator: Symptoms that are of concern as aging. • The Integrative Medicine Information Site: About evidence-based information to help people consider how to approach and use complementary and alternative therapies, including folk remedies	670,000**
NCVC	<Purpose> To provide the public with easy-to-understand explanatory information on major diseases related to cardiovascular diseases, their causes, and treatments, as part of efforts to overcome cardiovascular diseases. <Outline> The causes and treatments of major diseases related to the circulatory system, how to respond to certain golden symptoms and test results, and information on nutrition, diet, and therapeutic drugs.	220,000

Notes: *PV increase when a disaster occurs; at the time of the Noto Peninsula earthquake in January 2024, the number of monthly PV was 20,000.
 **Combined PV of other NCGG sites for medical professionals and researchers. Abbreviations: AMR, Antimicrobial Resistance; JIHS, Japan Institute for Health Security; NC, National Center; NCCJ, National Cancer Center Japan; NCCHD, National Center for Child Health and Development; NCGG, National Center for Geriatrics and Gerontology; NCNP, National Center of Neurology and Psychiatry; NCVC, National Cerebral and Cardiovascular Center; PV, Page Views.

December 2011, the NCNP established the "Disaster Mental Health Information and Support Center" as a project commissioned by the MHLW to provide mental health care measures, conduct research, provide training, and offer disaster-related support. Upon completing the

commission in 2018, the center was renamed the "Stress and Disaster Mental Health Information and Support Center". The center has since expanded its scope to include various traumas and severe stressors beyond disasters and continues to provide valuable information.

3.4. Developed as a unique NC initiative

The NCGG and NCVC fit into this category, in which information dissemination was primarily the responsibility of the public relations department rather than a dedicated information dissemination department.

NCGG: Dementia Portal, the Healthy Longevity Navi, and the Integrative Medicine Information Site.

Following the establishment of the information dissemination office after its transformation into an independent administrative entity in 2010, the NCGG has continued to disseminate information through the Dementia Information Portal (16), the Healthy Longevity Navi (17), and the Integrated Medicine Information Site (18).

NCVC: Learn about Cardiovascular Disease

At its establishment, the NCVC operated a Learn about Cardiovascular Disease website (19) as the public relations section of the general affairs department for information dissemination. Since 2022, it has been providing information as the planning and management department's public relations and planning office.

4. Variability in organizational structure, editorial policies, and quality control systems across NCs

The organizational structure for creating medical information varies across the departments within the NCs. Some departments have no full-time staff, while others have staff with concurrent appointments. Regarding professional qualifications, seven departments were staffed by individuals licensed as physicians, nurses, or pharmacists, while one department had staff without such licenses. In terms of academic backgrounds, five departments had staff with doctoral or master's degrees.

Concerning editorial policy and quality control in the preparation of information, three institutions reported having an editorial policy or equivalent, while two institutions have an editorial board. Three institutions have standards for reference materials used in content creation, while four institutions have a system for peer review of manuscripts by experts. One institution has a system for patient/public review of manuscripts, while six institutions respond to inquiries (Table 2).

In the information dissemination departments of each NC, information is prepared by staff with medical certifications and degrees using evidence-based reference materials. However, some departments lack a clearly defined policy for information preparation and may not have a peer review system. The content, target audience, and context in which the information is needed vary according to each NC's area of expertise.

5. Key challenges in medical information dissemination by NCs

The challenges identified by NCs can be grouped into three domains: staffing shortages and limited specialized expertise; funding restrictions and sustainability; and accessibility, dissemination channels, and evaluation of effectiveness.

5.1. Staffing shortages and limited specialized expertise

Regarding staffing shortages, respondents noted a lack of specialists, with few staff members possessing expertise in information dissemination and behavioral economics. In addition, there are staff shortages relative to the volume and scope of work. For example, some departments lack full-time staff, and while clinical staff experience is important for creating content that meets the needs of patients and families, their demanding clinical workload prevents them from spending sufficient time on information dissemination.

5.2. Funding restrictions and sustainability

Concerning financial resources, respondents noted that a dedicated budget is not always available. The allocation of funds remains unclear, and even when a budget for information dissemination exists, it may not be utilized to hire staff for this purpose. To ensure the dissemination of accurate medical information, it is crucial to first determine the minimum required expertise, staffing levels, and budget necessary to support these roles.

5.3. Accessibility, dissemination channels, and evaluation of effectiveness

Regarding access to information, it has been emphasized that diversifying information delivery methods is essential. Incorporating universal design principles is vital to ensure that public information is accessible through a variety of channels. To achieve this, NC information dissemination departments must adapt to rapidly evolving information access methods and implement flexible, prompt measures. For instance, leveraging social media, which is widely used across generations, to disseminate information requires timely and flexible responses. In addition, practical strategies for directing visitors to websites and methods for measuring and evaluating the effectiveness of information dissemination are needed.

6. Policy implications and future directions for public medical information dissemination from Japan's NCs

This paper highlights critical challenges in public medical information dissemination in Japan, drawing on questionnaire responses from staff at the NCs'

Table 2. Structure, editorial policy, and quality control in the production of medical information at National Centers

NCC	Number of staff ¹	Number of people who have medical license				Staff degrees ²			Availability of editorial policy and editorial board		Criteria for reference	Manuscript peer review system/user feedback		
		MD	RN	Ph	No license	Ph.D.	Master	Others	Policy	Editorial board		Expert	Patient/Public	Inquiry response
NCCJ	12	1	4	1	6	2	5	5	●	●	●	●	●	
JIHS the Hepatitis Information Center	6	4	0	0	2	4	0	0					●	
JIHS Diabetes and Metabolism Information Center	8	3	3	1	1	2	1	4	●	●	●	●	●	
JIHS AMR Clinical Reference Center	5	2	0	0	3	0	0	0		●	●	○	●	
NCCHD	12.5	6	0	1.5	5	3	N/A	N/A	○			●	●	
NCNP	6	4	0	0	2	N/A	N/A	N/A						
NCCGG	5	0	0	0	5	0	0	5					●	
NCCVC	5	1	0	0	4	1	0	4						

Notes: ¹Listed as indicated in the answer or by adding the number of persons listed in the qualifications held by the staff. ²Listed as indicated in response. Includes concurrent appointments. Qualifications and degrees are duplicated. ●: Available. ○: Some internal standards exist, but there are no explicit requirements. Abbreviations: AMR, Antimicrobial Resistance; JIHS, Japan Institute for Health Security; MD, Medical Doctor; N/A, Not applicable; NC, National Center; NCCJ, National Cancer Center Japan; NCCHD, National Center for Child Health and Development; NCGG, National Center for Geriatrics and Gerontology; NCNP, National Center of Neurology and Psychiatry; NCVC, National Cardiovascular Center; Ph, Pharmacist; Ph.D., Doctor of Philosophy; RN, Registered Nurse.

information dissemination departments. We identified significant structural barriers, including the absence of established content creation protocols, funding constraints, human resource shortages, and difficulties in adapting to rapidly evolving technologies. While the NCs have made progress in providing information on key diseases related to healthcare policies (Table 1), challenges remain in meeting the dynamic needs of users and society. Consequently, these findings suggest that disseminating medical information to the public should be viewed not merely as an institutional communication activity, but as a foundational element of health policy. Providing medical information to the public requires translating specialized knowledge into plain language and formats understandable to non-experts while reflecting the perspectives of intended audiences. This, in turn, calls for collaboration across disciplines, including disease specialists, medical information creators, and behavioral science experts. In addition, the diversification of information channels demands that NCs remain responsive to evolving information environments. Given the limits of any single NC, cross-NC collaboration is needed to develop a system that supports diverse populations and situations.

6.1. Establishing shared quality standards and sustainable governance

To address these challenges, we propose three strategic priorities. First, NCs should strengthen content quality and consistency by establishing shared quality control standards comparable to the Healthy People 2020 web quality benchmarks (20) and National Health Service (NHS) guidance (21). Japan currently lacks a unified national framework comparable to established content governance standards and guidance used in other settings, such as NHS guidance, for quality control of public medical information. To improve the quality of medical information provided to the public in Japan, NCs should consider developing national-level quality control standards for medical information in line with international discussions on online health information quality and content governance (e.g., clear editorial policies, transparent citation of evidence sources and update dates, and defined expert and patient/public review procedures) and promote their adoption across NCs.

Second, NCs should establish a structured mechanism to incorporate public perspectives into content development (e.g., patient/public review panels and user feedback loops). Meaningful public engagement across different levels of healthcare has been recognized as a promising pathway toward improving the quality of care (22). Public involvement in developing health information can help ensure that materials reflect users' needs, questions, and perspectives, thereby improving their relevance, understandability, and usability for

intended audiences (23). This approach aligns with World Health Organization's concept of health-literate systems that support and strengthen individual health literacy (24), as well as NHS guidance emphasizing user needs (21). This approach would emphasize accessible, evidence-based, clinically safe, and user-centered medical information. Such mechanisms may also help NCs respond effectively to emerging dissemination channels, including social media.

Third, NCs should strengthen sustainable capacity by securing dedicated human and financial resources. Furthermore, they must foster multidisciplinary collaboration to translate specialized knowledge into understandable, user-centered information, drawing on expertise from disease specialists, medical information creators, and behavioral science. Such collaboration is essential to address the complex, interconnected nature of stakeholders in health literacy (24). Given the limits of what any single NC can provide, cross-NC collaboration may be particularly valuable—not only for sharing knowledge and best practices, but also for jointly building a sustainable system for the dissemination of public medical information. Currently, the medical information dissemination departments of each NC in Japan independently produce and disseminate medical information. By first establishing a collaborative framework among these NCs to share medical information across disease categories and then organizing interdisciplinary teams that include experts in communications and behavioral science, the quality of public medical information in Japan can be expected to improve. Future consideration could be given to mechanisms such as pooled funding, shared communication specialists, and common platforms for developing, disseminating, evaluating, and updating public medical information across NCs.

6.2. Sustaining trusted medical information in the age of generative AI: The role of NCs

Generative AI may intensify health misinformation by producing content that appears fluent, professional, and evidence-based, even when it is inaccurate or insufficiently grounded. Generative AI can increase the volume, speed, and perceived credibility of health misinformation, while responses to such risks are still evolving (25). In this context, authoritative sources of public medical information are increasingly important. Public trust has been identified as central to mitigating health misinformation, particularly for health authorities and governmental institutions that must build such trust systematically (26). Although NCs cannot directly control all AI-generated outputs, they can serve as trusted public medical information infrastructures and reference sources in the era of AI. NCs provide accessible, evidence-based public medical information with transparent documentation of authorship, evidence

sources, review processes, update dates, and references. In addition, public guidance regarding how to evaluate AI-generated medical information and verify it against trusted institutional sources could support more informed health-related decisions. Cross-center standards for quality assurance, timely updates, expert review, accessibility, and AI-era health information literacy will be essential for sustaining a trustworthy public health information ecosystem.

7. Conclusions

To enhance NC-based public medical information dissemination and contribute to public health, it is imperative to address shortages in human and financial resources, maintain agility to adapt to an evolving information environment, and establish a collaborative foundation across NCs. Strengthening these elements will help ensure that reliable public medical information functions as a foundational element of health policy. In the era of social media and generative AI, such efforts are increasingly important for maintaining a trustworthy public medical information ecosystem.

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