mon interest was lost. The sustainability of UHC may be associated with health finance and management capacity, which is another challenge. Once UHC is prioritized and targeted for the post-MDG agenda, it is less likely to fluctuate than PHC. However, the global health community has been swinging like a pendulum from a vertical approach (selective PHC and the MDGs), to a horizontal approach (health system strengthening and PHC). Even if the UHC concept achieves mainstream acceptance among the global health community, the direction of the stream should be carefully monitored through the TICAD dialogue processes and the World Health Assembly agendas, which cover a variety of items but which do not always reflect international health issues in terms of disease burden [39].

Third, the outcomes achieved through TICAD should be considered. As the TICAD monitoring process reported, the renovation of more than 1,000 health facilities and the training of more than 100,000 health workers have already been achieved. These indicators were set in reflection on the "Yokohama Action Plan" and "Toyako Framework for Action on Global Health". In a sense, Japan may have achieved accountability to the global health community, however these achievements and inputs including an ongoing model project named "EMBRACE" (Ensure Mothers and Babies Regular Access to Care) [40], and education services in poor countries from 2011 to present (continuing to 2015) [41] have been made based on a large amount of donor funds, including Japan's pledge of US$ 8.5 million at the UN MDG Summit in September 2010, named the "Kan commitment," from the name of the prime minister of the day [42]. The Kan commitment was not restricted to TICAD actions. The problem, however, is that this achievement came at the cost of such a large amount of input. As noted above, the main objective of TICAD is to promote output-oriented policy dialogue, not the pump-priming of the pledges, which are necessary to sustain high-input programs.

Japan has gained newer accountability for establishing the means by which this achievement can vitalize communities in the light of the human security concept. In the coming TICAD V and follow-up meetings, the direction of policy dialogue should focus on how to bring about outcome and establish accountability in African countries while best utilizing existing outputs along with evaluating the appropriateness and effectiveness of these inputs; even though evaluating outcomes will be difficult due as it will take longer to confirm the actual outcomes.

CONCLUSION

Japan's health system experiences and the global health policy presented by the Ministry of Foreign Affairs and JICA are consistent with the human security concept. The human security concept can be the basis of health system strengthening, which complements UHC. It is also Japan's challenge to incorporate PHC into health system strengthening and infectious disease control activities, to strengthen newborn and child health activities, and to contribute to UHC development. In the coming TICAD dialogue, the human security approach should be strengthened with a view to the post-2015 agenda.

CONTRIBUTION

Takahashi K and Kobayashi J made a significant contribution to the writing of the manuscript. Nomura M made a significant contribution to the writing of the Table 1. Kakimoto K and Nakamura Y supervised all parts of the manuscript.

CONFLICT OF INTEREST STATEMENT

None declared.

ACKNOWLEDGEMENTS

This research was funded by the Grant of Research on global health issues, Ministry of Health, Labour and Welfare, Japan.

REFERENCES

1. Webster PC. What next for MDGs? CMAJ 2012; 184: E931–932.
2. The Government of Japan, United Nations (OSCAL U, Global Coalition for Africa). Launching of TICAD II Process. Available from: http://www.mofa.go.jp/region/africa/ticad2/ticad23.html. (Accessed on Feb 8, 2013)
3. The Government of Japan. Tokyo Declaration on African Development "Towards the 21st Century". Available from: http://www.mofa.go.jp/region/africa/ticad2/ticad22.html. (Accessed on Feb 8, 2013)
4. The Government of Japan. Second Tokyo International Conference on African Development (TICAD II). Available from: http://www.mofa.go.jp/region/africa/ticad2/ticad22.html. (Accessed on Feb 8, 2013)
5. The Government of Japan. Summary by the Chair of TICAD III. Available from: http://www.mofa.go.jp/region/africa/ticad3/chair-1.html. (Accessed on Feb 8, 2013)
6. Japan Center for International Exchange. Challenges in Global Health and Japan's Contributions. Available from: http://www.jcie.or.jp/cross/globalhealth/overview.html. (Accessed on Feb 12, 2013)
7. Takemi K, Jimba M, Ishii S, Katsuma Y, Nakamura Y;

Working Group challenges with Global Health and Japan's contribution. Human security approach for global health. Lancet 2008; 372: 13–14.
8. Takemi K, Masamine J, Sumie I, Katsuma Y, Nakamura Y. Task Force on "Challenges in Global Health and Japan's Contribution". Global Health, Human Security, and Japan's Contributions. Tokyo, Japan: Japan Center of International Exchange; 2009.
9. Ministry of Foreign Affairs, Japan. Yokohama Action Plan. Yokohama, Japan: Ministry of Foreign Affairs, Japan; 2008.
10. Ministry of foreign affairs J. The TICAD V Preparatory Senior Officials' Meeting (SOM), Chair's Summary: Ministry of foreign affairs, Japan, 2012. Available from: http://www.mofa.go.jp/mofaj/area/ticad/tc5/pdfs/som_1211_01.pdf. (Accessed on Apr 15, 2013)
11. Takemi K, Reich MR. The G8 and Global Health: Emerging Architecture from the Toyako Summit. In: Hubbard S, Ashizawa K, eds. G8 Hokkaido Toyako Summit Follow-Up Global Action for Health System Strengthening: Policy Recommendations to the G8 Task Force. Tokyo, Japan: Japan Center for International Exchange; 2009.
12. Comission on Human Security. Human Security Now. New York: United Nations, 2003.
13. Takemi K. Japan's Role in Global Health and Human Security. Available from: http://www.jcie.or.jp/cross/globalhealth /cgh-jc01.pdf. (Accessed on Apr 15, 2013)
14. Tall CT, Jimba M. Health and Human Security in Action—Presentation from the Ground. Available from: http://www.jcie.org/japan/j/pdf/csc/ghhs/hhs/ticad/symposium_jimba.pdf. (Accessed on Apr 15, 2013)
15. Kunii O. The Okinawa Infectious Diseases Initiative. Trends Parasitol 2007; 23: 58–62.
16. Koumura M. Global health and Japan's foreign policy. Lancet 2007; 370: 1983–1985.
17. G8 Health Experts Group. Toyako Framework for Action on Global Health. Tokyo, Japan: United Nations, 2008.
18. The Government of Japan. Summary by the Chair of Hokkaido Toyako Summit. Available from: http://www.mofa.go.jp/policy/economy/summit/2008/doc/doc080709_09_en.html. (Accessed on Apr 15, 2013)
19. The World Health Organization. Positioning Health in the Post-2015 Development Agenda, WHO Discusssion Paper. Available from: http://www.who.int/topics/millennium_development_goals/post2015/WHOdiscussionpaper_October2012.pdf. (Accessed on Apr 15, 2013)
20. Reich MR, Takemi K, Roberts MJ, Hsiao WC. Global action on health systems: a proposal for the Toyako G8 summit. Lancet 2008; 371: 865–869.
21. Ikeda N, Saito E, Kondo N, Inoue M, Ikeda S, Satoh T, Wada K, Stickley A, Katanoda K, Mizoue T, Noda M, Iso H, Fujino Y, Sobue T, Tsugane S, Naghavi M, Ezzati M, Shibuya K. What has made the population of Japan healthy? Lancet 2011; 378: 1094–1105.
22. Reich MR, Ikegami N, Shibuya K, Takemi K. 50 years of pursuing a healthy society in Japan. Lancet 2011; 378: 1051–1053.
23. Ikegami N, Yoo BK, Hashimoto H, Matsumoto M, Ogata H, Babazono A, Watanabe R, Shibuya K, Yang BM, Reich MR, Kobayashi Y. Japanese universal health coverage: evolution, achievements, and challenges. Lancet 2011; 378: 1106–1115.
24. McKee M, Balabanova D, Basu S, Ricciardi W, Stuckler D. Universal health coverage: a quest for all countries but under threat in some. Value Health 2013; 16: S39–S45.
25. Japan International Coperation Agency (JICA). Japan's Experiences in Public Health and Medical Systems. Available from: http://jica-ri.jica.go.jp/IFIC_and_JBICI-Studies/english/publications/reports/study/topical/health/index.html. (Accessed on Apr 15, 2013)
26. Shibuya K, Hashimoto H, Ikegami N, Nishi A, Tanimoto T, Miyata H, Takemi K, Reich MR. Future of Japan's system of good health at low cost with equity: beyond universal coverage. Lancet 2011; 378: 1265–1273.
27. World Health Organization. MDG 6: combat HIV/AIDS, malaria and other diseases. Available from: http://www.who.int/topics/millennium_development_goals/diseases/en/. (Accessed on Apr 15, 2013)
28. United Nations News Center. Hypertension and Diabetes on the Rise Worldwide, Says UN Report 2013. Available from: http://www.un.org/apps/news/story.asp?newsid=42012#.UbFHi-eeOEY. (Accessed on May 30, 2013)
29. World Health Organization. World Health Statistics 2012. Geneva, Switzerland: World Health Organization; 2013.
30. Vega J. Universal health coverage: the post-2015 development agenda. Lancet 2012; 381: 179–180.
31. United Nations. The Human Rights Based Approach to Development Cooperation Towards a Common Understanding Among the UN Agencies. The Interagency Workshop on a Human Rights Based Approach. Geneva: United Nations; 2003.
32. Ministry of Foreign Affairs, Sweden. Human Rights in Swedish Foreign Policy. Stockholm, Sweden: Government Offices of Sweden; 2009.
33. Bluck S. DFID's Rights Based Approach. Equity and Rights Team, ed. London: DFID; 2006.
34. Were M. Human Security Approach in the Health Sector in Africa. Available from: http://www.jcie.org/japan/j/pdf/csc/ghhs/hhs/ticad/symposium_were.pdf. (Accessed on Apr 15, 2013)
35. International Poverty Centre. Cash Transfers: Lessons from Africa and Latin America. Brasilia: UNDP; 2008.
36. Schubert B, Slater R Social cash transfers in low-income African countries: conditional or unconditional? Dev Policy Rev 2006; 24: 571–578.
37. Beyeler N, York De La Cruz A, Montagu D. The impact of clinical social franchising on health services in low- and middle-income countries: a systematic review. PLoS One 2013; 8: e60669.
38. Cueto M. The origins of primary health care and selective primary health care. Am J Public Health 2004; 94: 1864–1874.

39. Kitamura T, Obara H, Takashima Y, Takahashi K, Inaoka K, Nagai M, Endo H, Jimba M, Sugiura Y. World Health Assembly Agendas and trends of international health issues for the last 43 years: Analysis of World Health Assembly Agendas between 1970 and 2012. Health Policy 2013; 110: 198–206.
40. The Government of Japan. Japan's Global Health Policy 2011–2015. Ministry of Foreign Affairs, Japan; 2010.
41. The Government of Japan. Japan's Education Cooperation Policy 2011–2015. Ministry of Foreign Affairs, Japan; 2010.
42. Ministry of Foreign Affairs, Japan. The Fourth TICAD Ministerial Follow-up Meeting. Available from: http://www.mofa.go.jp/region/africa/ticad/min1205/. (Accessed on Apr 15, 2013)

Yoda et al. BMC Pregnancy and Childbirth 2013, 13:207
http://www.biomedcentral.com/1471-2393/13/207

BMC
Pregnancy & Childbirth

RESEARCH ARTICLE Open Access

Japanese trends in breastfeeding rate in baby-friendly hospitals between 2007 and 2010: a retrospective hospital-based surveillance study

Takashi Yoda[1,4], Kenzo Takahashi[2,4*] and Yoshitada Yamauchi[3,4]

Abstract

Background: The goal of Japan's national "Healthy and Happy Family 21" campaign is to increase the nationwide breastfeeding rate for babies in the first month of life, which is currently below 50%, to a level of 60%. In this article, we summarize the breastfeeding rate for all of Japan's baby-friendly hospitals (BFHs) and extract their strengths in conjunction with the structural and legislative support that they have in place and finally draw up a policy for dispersing BFH activities to non-BFH delivery facilities, which could be useful for increasing the breastfeeding rate.

Methods: This study included all of the 61 BFHs that are registered in Japan. These hospitals account for approximately 2% of nearly 3,000 Japanese delivery facilities. The surveillance data, which were collected anonymously by the Japan Breastfeeding Association in 2007–2010, were summarized. The numbers of babies who were breastfed after delivery, at discharge from BFHs and at one month of age, were collated. The length of hospital/clinic stay was also collected.

Results: The collection rate was 100% in each year (2007, 2008, 2009 and 2010). The breastfeeding rates during hospital stay, at discharge, and one month were >70%, ~90%, and >75%, respectively. The median length of stay was 5 days (minimum/maximum: 5/8) for primipara.

Conclusions: The breastfeeding rate at BFHs at one month of age was more than 75%. This surpassed the current national average (<50%). The median length of hospital/clinic stay was 5 days. In this 5-day period, BFH activities can play an important role in increasing the breastfeeding rate. Since hospitalization for the reported national median length of stay of 6 days, is legally guaranteed, the disbursement of BFH activities to non-BFH delivery facilities, with special support to mothers who delivered by cesarean delivery, would be a useful strategy for achieving a 60% breastfeeding rate at one month of age.

Keywords: Breastfeeding rate, Baby-friendly hospitals, Length of stay, Japan

Background

In 1989, *Ten Steps to Successful Breastfeeding* (10-step guidelines) was jointly published by the WHO and UNICEF [1]. In 1991, the Baby-Friendly Hospital Initiative was launched [2], under which a hospital that adheres to and promotes the 10-step guidelines as published by the WHO and UNICEF [1], will be certified as a baby-friendly hospitals (BFH). Currently, there are more than 15,000 BHFs worldwide. These hospitals promote breastfeeding, which has unique biological and emotional effects on the health of mothers and babies [3,4].

Japan's Okayama Medical Center was certified as the first BFH in the developed world in 1991. Since then, the Japan Breastfeeding Association (JBA) has received a mandate from WHO/UNICEF to certify Japanese BFHs [5]. The JBA is the only organization that can certify Japanese BHFs. In spite of these promising beginnings, the number of BFHs in Japan has been slow to increase because the JBA remained a private association until 2010, when it was

* Correspondence: kt_intl_@ja2.so-net.ne.jp
[2]Department of Epidemiology and Public Health, School of Medicine, Yokohama City University, 3-9 Fukuura, Kanazawa-ku, Yokohama-shi, Kanagawa 236-0004, Japan
[4]The Japan Breastfeeding Association, 3-9-4 Arai, Nakano-ku, Tokyo 165-0026, Japan
Full list of author information is available at the end of the article

incorporated as an institution. The JBA has never accepted donations from companies or the dairy industry, and its activity has been limited due to a scarcity of human resources. Within the constraints of its limited resources, the JBA has worked on three pillars of activities: providing BFH certification, hosting training for doctors and midwives, and collecting and providing breastfeeding information. As of December 2010, there were 61 BHF-certified facilities in Japan. At the time of writing, the total number of delivery facilities in Japan is nearly 3,000 [6], which means that BFHs only account for approximately 2% of delivery facilities nationwide.

Japan's own perinatal care system is unique and elaborate. When a female is diagnosed as pregnant at a hospital, she registers her pregnancy at the municipal government office in the municipality in which she resides. At the time of registration, a maternal and child health (MCH) handbook is given free of charge [7]. This system is in place throughout Japan, where it applies to all of the approximately 1 million annual deliveries. The standard of the MCH handbook is established by the Ministry of Health, Labour and Welfare (MHLW) and every local government arranges their standards to correspond to its contents. The MCH handbook has two functions: to be a record of pregnancy, postparturient status, delivery status of newborns, immunization and child development history up until the age of six years (when children enter elementary school); and as a means of circulating necessary information on child rearing including child development milestones, schedule of immunizations, nutrition and other services offered by local governments. Since Japan's literacy rate is nearly 100%, the MCH handbook system works well. In almost 99% of cases, the place of delivery is a maternal clinic or hospital [8]. The average length of stay after delivery is 6 days [9]. Newborns are registered with a birth certificate within two weeks of delivery at the local government office. During hospital stay, mothers receive postparturient care including checkups for uterus recovery and breast care, and are instructed how to care for newborns and give breast milk or formula milk as appropriate. Within 4–5 days after birth, babies receive the congenital metabolic disorder screening test, which covers 6 disorders (phenylketonuria, galactocemia, maple syrup urine disease, homocystinuria, congenital hypothyroidism, and congenital adrenal hyperplasia). This test is stipulated by law [10]. After discharge from hospital, public health nurses, who are official staff of the health and welfare sector of the municipal government, make home visits (the newborn visit) - in which they check newborns before the age of one month, hear the complaints of mothers, provide advice and sometimes refer newborns to pediatricians. At one month after delivery, mothers and babies typically consult a doctor for a checkup. This one month check is not subsidized, but mothers routinely visit the clinic or hospital where the infant was delivered. Periodical check-ups for infants are offered free of charge by municipal governments at the ages of 3–4 months, 1.5 years, and 3 years. Regarding child nutrition, public health nurses mainly provide guidance on breastfeeding and weaning to food upon request. Several essential vaccines (DPT, MR, Polio etc.) are also given to children free of charge.

The MHLW's most recent 10-yearly Child Nutrition Survey (a sampling survey), which was conducted in 2005, listed the nationwide rate of breastfeeding at the age of one month as below 50% [11]. The procedure of the survey is as follows: 3,000 households with infants are randomly sampled by cluster sampling; surveyors visit each of these households and leave self-administered questionnaires, which mothers complete by checking the information recorded in their MCH handbooks. The surveys are collected later. The data collected are then merged and analyzed by the MHLW. The same survey also reported that more than half of the pregnant women surveyed wished to give breast milk to their babies [11]. The discrepancy between the number of mothers who wish to give their babies breast milk and the nationwide goal was reflected in a national campaign for newborn services called "Healthy and Happy Family 21," in which several discrete goals were set for maternal, newborn, child and adolescent health service activities [12]. The goal for breastfeeding was to increase breastfeeding rate at one month of age from an average of below 50% to 60%. In response to this movement, the JBA has been conducting surveillance on the breastfeeding rate at BFHs since 2007. These hospitals had not been surveyed prior to this time. All BFHs registered in Japan by the JBA are obliged to participate in these surveillance activities. In this article, we summarize the results of this surveillance in order to pave the way to achieving the desired increase from an average of below 50% to 60%, and describe the strength of Japan's BFHs, which appear to be well supported by their structural and legislative framework. We conclude that a wider implementation of BFH activities to other delivery facilities would be a useful strategy for achieving the desired 60% breastfeeding rate at one month of age.

Methods

All Japanese BFHs that were recognized as compliant to the Baby Friendly Hospital Initiative standards [13] and which were registered with the JBA were enrolled in this study. A structured questionnaire, which was organized by the JBA, was sent to each registered hospital to collect information about healthy newborns who stayed with their mothers during the delivery period (Table 1). Babies with complications including preterm, low birth weight and cleft palate were excluded from the study as they would most likely have been sent to a hospital with a neonatal intensive care unit or neonatal care unit, which would not

Table 1 Definition of healthy newborns in the present study

1) Term baby whose gestational age is between 37 weeks, 0 days and 41 weeks, 6 days.
2) Birth weight is between 2,500 g and 3,999 g.
3) Exclusion criteria: Newborns were excluded from the survey if they had the following conditions.
   a) Babies treated separately due to reasons including requirement for incubation or admission to NICU.
   b) Babies given intravenous fluids.
   c) Babies with problems affecting breastfeeding including cleft palate or hypoglycemia.
   d) Babies whose mothers had complications influencing breastfeeding ability including major hemorrhage or the intake of medicines where breastfeeding is prohibited.

be registered as a BFH. The exclusion criteria are listed in Table 1.

The above mentioned questionnaire, the completion of which is mandatory for all BFHs in Japan, is issued annually. Questionnaires are sent to BFHs in January and are returned by April. The contents of questionnaire are as follows: mode of delivery, length of stay and application of labor induction, epidural anesthesia and episiotomy, and the mode of nutrition including supplementation (formula milk or glucose water) during hospital stay, at discharge and at one month of age. The data are collected without unique identifiers (names of mothers or babies, birth dates, addresses, and phone numbers) and the cumulative values for each item are summarized. In the synthesis stage of the questionnaire, we followed the definition of "full" breastfeeding as defined by WHO/UNICEF [14,15], which includes both exclusive breastfeeding and predominant breastfeeding. The number of breastfed children during hospital stay includes the number of fully breastfed children. The number of breastfed children at discharge includes the number of fully breastfed children within 24 hours of discharge. The number of breastfed children at the age of 1 month was determined by interviews carried out in check-ups of one month olds by staff at the respective BFHs, who asked mothers whether or not they were breastfeeding, in consideration of the 24-hour recall recommendation in the indicator guidelines of the WHO [16]. The data were reported in a compiled manner and the breastfeeding rate was calculated based on the collected data. The data were processed and analyzed using Microsoft Excel 2007 (Microsoft, Redmond, WA).

Ethical considerations

The data were collected only by registered hospitals/clinics and reported to the JBA in a compiled manner. Personal information was not collected (including the names of mothers or babies, birth dates, addresses, and phone numbers). Before launching this study, we consulted the ethical committee of the Nerima Hikarigaoka Hospital and were officially advised that ethical review was not required because the data were collected in an unlinked anonymous manner.

Results

The data collected covered the years 2007 to 2010. The collection rate for each year was 100%. The numbers of BFHs for each year were 45 (2007), 54 (2008), 59 (2009) and 61 (2010). The number of breastfed newborns ranged from 14,579 (80.2%) in 2007 to 19,209 (73.2%) in 2010. The breastfeeding rate during hospital stay was > 70% (Table 2). The breastfeeding rate at discharge from hospital/clinics reached 90%. The rate at one month was > 75% (Table 2).

The median length of hospital/clinic stay for normal vaginal delivery was 5 days (minimum/maximum: 5/8) for primipara and 4 days (minimum/maximum: 4/9) for multipara. The median length of stay for cesarean delivery was 10 days (minimum/maximum: 6/15) irrespective of primipara or multipara status.

When breast milk was not sufficiently secreted, glucose water was used more frequently for supplementation than formula milk. The rate of glucose water supplement used was 13.5% in 2007. This increased to 18.8% in 2010. The proportion of formula milk supplementation increased from 8.4% in 2007 to 11.6% in 2008, and increased again to approximately 13% in 2009 and 2010 (Table 3).

The breakdown of mode of delivery is shown in Table 4. An increase in the percentage of cesarean section deliveries was observed while labor induction was seen to decrease. When the trends of data were subcategorized by year of registration (34 BFHs registered before 2005, 3 registered in 2006, 5 in 2007, 10 in 2008, 7 in 2009 and 3 in 2010), the breastfeeding rate at discharge was slightly higher for each year than that of the previous year. Interestingly, for each of these years, the breastfeeding rate in the period from discharge to the age of one month, was slightly lower than the previous year (Table 5, Figure 1).

Discussion

Our survey describes the current status of breastfeeding in Japan's BFHs. The breastfeeding rate during hospital stay was more than 70% and reached almost 90% at discharge from hospital/clinics. Even though there was an apparent decrease in the breastfeeding rate at one month, the rate was still higher than the national average. We surmise that Japan's BFHs nurture better opportunities for breastfeeding.

The main reason for the high breastfeeding rate in Japan's BFHs can be attributed to the length of stay in the hospital/clinic, which was at least 5 days (median). Within 5 days, almost all mothers experience stage 2 of lactogenesis, in which copious secretion of breast milk begins [17]. The conditions of breast milk production and

Table 2 Proportion of breastfed babies

Year	Number of healthy newborns born in BFHs	Number of breastfed newborns during hospital stay (%) (95% CI)	Number of breastfed newborns at discharge (%) (95% CI)	Number of breastfed babies at 1 month (%) (95% CI)
2007	18,178	14,579 (80.2) (79.6 to 80.8)	16,803 (92.4) (92.1 to 92.8)	13,810 (76.0) (75.3 to 76.6)
2008	23,556	17,668 (75.0) (75.5 to 75.5)	21,352 (90.6) (90.3 to 91.0)	19,288 (81.9) (81.4 to 82.4)
2009	24,032	18,277 (76.0) (75.6 to 76.6)	21,151 (88.0) (87.6 to 88.4)	18,893 (78.6) (78.1 to 79.3)
2010	26,247	19,209 (73.2) (72.6 to 73.7)	19,210 (73.2) (72.7 to 73.7)	21,246 (80.9) (80.5 to 81.4)

newborns can be monitored for 24 hours by medical staff. Staff following the 10-step guidelines [1], can thus give appropriate advice to mothers who wish to breastfeed their newborns. Japan's national median length of hospital stay is 6 days [9], which is almost identical to our result with regard to corresponding to the timing of the inception of lactogenesis. This duration of hospital stay is possible because of a lump-sum allowance for childbirth and nursing, in which the cost of delivery is covered by health insurance. The amount is generally JPY 420,000 (USD 4,200; USD 1 ≈ JPY 100) for each delivery. This allowance is in place for all of the approximately 1 million annual deliveries in Japan [18,19]. Under this allowance, the performance of the congenital metabolic disorder screening test at obstetric hospitals must be carried out before discharge (4–5 days after delivery), thus freeing hospitals/clinics of the burden of babies returning to receive the test.

This structural benefit also applies to supplementation in cases of breast milk shortage during hospital stay. Glucose water is used for supplementation in a higher proportion of cases than formula milk. In the guidelines published by the Academy of Breastfeeding Medicine, the recommended mode of supplementation of milk formula and glucose water is regarded as inappropriate [20]. However, in Japan's BFHs, glucose water is the major mode of supplementation in cases of shortage of breast milk if the mother is not suffering fatigue or stress. The standard of application of glucose water is stipulated by the JBA Committee of Supplementation [21], and its recommendations do not differ from those of the American Academy of pediatrics [22]. In practice, its application varies among BFHs based on the medical decisions of the doctors/midwives in charge. When doctors or nurses find symptoms (including a more than 10% body weight decrease from birth weight, development of fever without infection, or insufficient breast milk secretion) glucose water supplementation is considered as medical indication and is generally initiated [22]. Glucose water is considered a temporary substitution for breast milk in Japan's BFHs and mothers with a shortage of breast-milk can use it while they wait for their breast milk supply to become sufficient. This is because medical staff can closely observe the condition of babies and advise mothers until the beginning of breast milk secretion. Here again, the median length of 5 days contributes to a benefit for both mothers and babies. Due to the advice they receive, mothers at BFHs may thus avoid frustration with breastfeeding. According to Watt et al., "It is a matter of opinion to decide the most appropriate length of postpartum in-hospital stay because the length of stay has ranged from 14-day lying-in periods to "drive-through" deliveries with only several hours of postpartum in-hospital care [23]". Our findings suggest that "drive-through" deliveries are not optimal for the appropriate promotion of breastfeeding. The increase in the number of cases of supplementation with glucose water and formula milk may have a relationship with the increase in the number of cesarean section deliveries. However, it is not possible to confirm this without analyzing individual data, which were not collected in our surveillance. Detailed analysis using individual data and including logistic regression analysis to identify contributing factors is a topic for further research. Regarding the decrease in breastfeeding rate at one month, we speculate that one of the main contributing factors is mothers' feeling discontent at their level of breast milk secretion [24,25], as well as child rearing stress and the flood of formula milk information. Here again, detailed analysis to identify contributing factors would be an interesting topic for future study.

Table 3 Mode of supplementation

Mode	2007 (n = 18,178)	2008 (n = 23,556)	2009 (n = 24,032)	2010 (n = 26,247)
Glucose water, No. (%)	2,454 (13.5)	3,769 (16.0)	3,845 (16.0)	4,934 (18.8)
Formula milk, No. (%)	1,527 (8.4)	2,732 (11.6)	3,124 (13.0)	3,491 (13.3)

The existing function of BFHs may be another reason for the high breastfeeding rate. In line with Part 10 of

Table 4 Summary of mode of delivery

	2007		2008		2009		2010	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)
(1) Total No. of delivery	23,762		31,036		31,612		35,168	
Single birth	23,088	97.2	30,157	97.2	30,719	97.2	33,622	95.6
Multiple birth*	674	2.8	878	2.8	893	2.8	823	2.8
(2) Mode of delivery								
Vaginal delivery	19,146	80.6	24,528	79.0	25,064	79.3	27,454	78.1
Cesarean section	4,505	19.0	6,508	21.0	6,527	20.6	7,670	21.8
Emergency cesarean section**	0	0.0	0	0.0	2,298	7.3	3,387	9.6
No. of vacuum extraction	1,396	5.9	1,902	6.1	1,880	5.9	2,145	6.1
No. of forceps delivery	124	0.5	139	0.4	200	0.6	274	0.8
No. of episiotomy	5,647	23.8	7,700	24.8	7,583	24.0	7,195	20.5
Labor induction	3,453	14.5	5,152	16.6	5,618	17.8	5,385	15.3
Epidural anesthesia***	66	0.3	70	0.2	57	0.2	152	0.4

*Multiple births includes more than twin birth.
**The number of emergency cesarean sections is included in the number of cesarean sections.
***Epidural anesthesia includes painless delivery.

the 10-step guidelines [1], BFHs have an additional role in fostering the establishment of breastfeeding support groups, and to refer mothers to these groups upon discharge from the hospital/clinic. Midwives who spent several days with mothers and developed a trusting relationship can play an important role for referral to support groups [26]. Considering the data trend, BFH registration may not always motivate BFH staff to maintain a high breastfeeding rate because the breastfeeding rates in each group showed a mild decrease after registration. Thus, the promotion of greater adherence to Baby Friendly Hospital Initiative guidelines is something that should be considered. Even though further surveys are needed, we surmise that these activities would support communication between mothers and thus increase the breastfeeding rate.

As seen above, Japan's perinatal service situation fits well with the BFH services and provides strong support for Japan's BFH activities. In an article which analyzes

Table 5 Breastfeeding rate trends subcategorized by year of registration

	Year of registration	2007	2008	2009	2010
Breastfeeding rate during the hospital stay	Before 2005 (n = 34)	79.3	78.7	78.2	76.3
	In 2006 (n = 3)	78.2	80.8	85.7	81.1
	In 2007 (n = 5)	80.4	75.0	77.8	67.4
	In 2008 (n = 10)		73.4	69.6	66.8
	In 2009 (n = 7)			82.3	82.5
	In 2010 (n = 3)				76.8
Breastfeeding rate at discharge from hospital	Before 2005 (n = 34)	92.0	91.5	90.8	90.0
	In 2006 (n = 3)	96.1	95.9	96.1	94.7
	In 2007 (n = 5)	93.1	90.4	92.6	85.2
	In 2008 (n = 10)		91.8	90.5	88.0
	In 2009 (n = 7)			93.4	92.8
	In 2010 (n = 3)				61.8
Breastfeeding rate at the age of one month	Before 2005 (n = 34)	86.2	86.2	85.7	85.4
	In 2006 (n = 3)	90.5	91.0	91.6	95.0
	In 2007 (n = 5)	84.1	84.1	85.0	79.7
	In 2008 (n = 10)		82.2	80.1	80.1
	In 2009 (n = 7)			86.3	86.2
	In 2010 (n = 3)				80.8

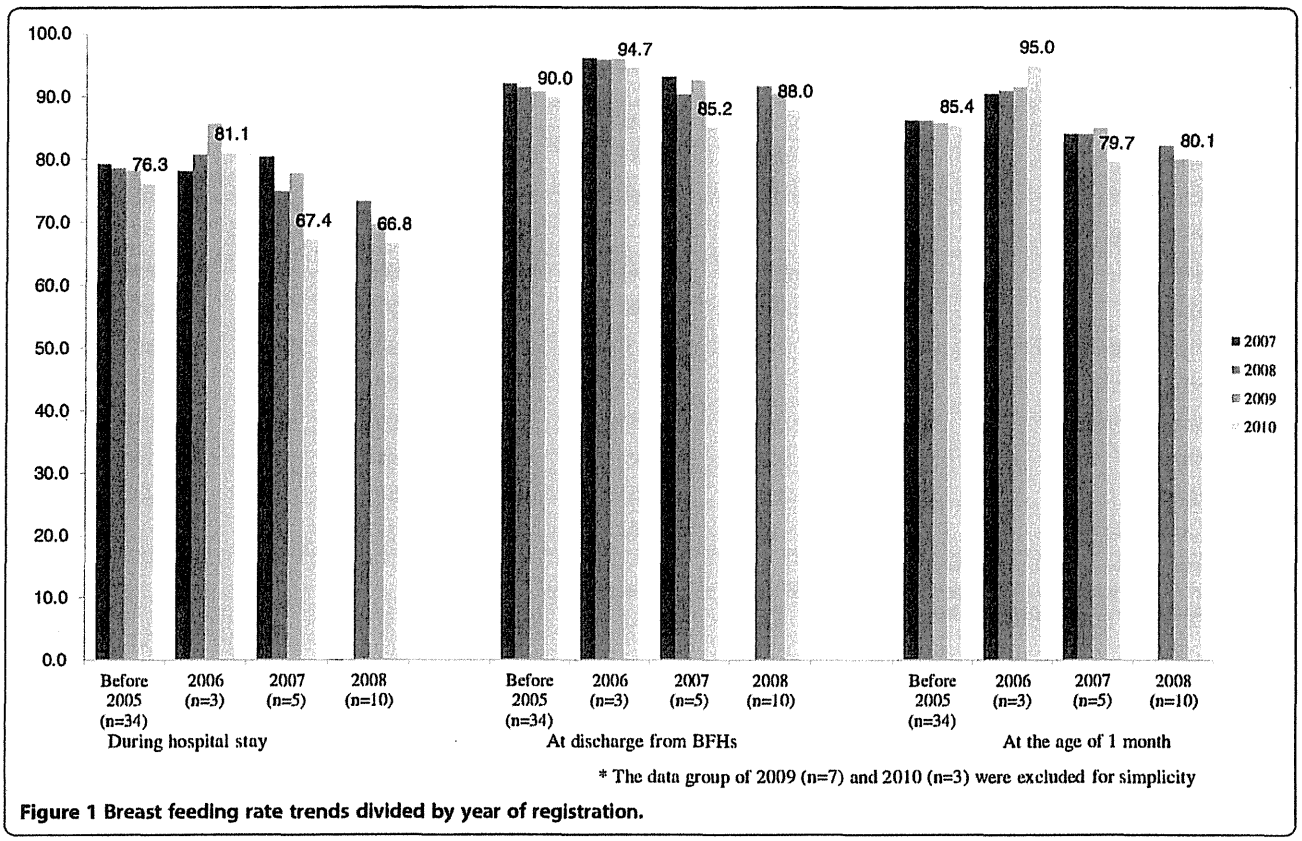

Figure 1 Breast feeding rate trends divided by year of registration.

policy directions in EU countries, including high performance countries like Sweden and Norway, Cattaneo et al. pointed out that, in order to improve breast-feeding services, it is necessary to use best-evidence-based models, enhance legislative protections and provide more widely-available training [27]. In the case of Japan, it is evident that BFHs in the current framework are the best evidence-based models since supportive legislation already exists. Thus, the wider implementation of Japan's BFH activities, including the provision of training by the JBA would be a reasonable strategy for increasing the breastfeeding rate. Since 2010, when the JBA became an incorporated body, it has recommended enhancement of breastfeeding policies to the MHLW, which reflect the policies of countries with high breastfeeding rates.

Limitations

There were a number of limitations to this study. First, our discussion is based on the assumption that all BFH standards are strictly applied by each BFH. The details of services provided at each BFH were not scrutinized in this survey, however, we may assume adherence to these standards because each BFH is subject to regular inspection by the JBA. Investigating the precise level of compliance with BFH standards at each of the facilities will be a further challenge.

Second, we should consider the reliability of national data as a reference. While BFH data is retrieved yearly as an enumeration survey, the most recent national data was acquired in 2005 as a sampling survey and only its estimation was reported. In addition, the national survey, the questionnaire simply asked whether mothers breast-fed, provided formula milk or whether they were mixed feeding. This three-way classification (breast feeding, formula milk feeding and mixed feeding) corresponds to the classifications of the MCH handbook. Furthermore, the national data may include babies that are excluded from the BFH data. The application of this kind of data as a reference is not strictly appropriate. We have adopted this data for comparison due to the absence of more appropriate national data, even from research papers. The data were adopted on the basis of the strategies of the "Healthy and Happy Family 21" survey. However, our BFH data were gathered by enumeration surveillance. Since BFHs are considered to be motivated to promote breastfeeding, the results could have a reverse confounding effect. Notwithstanding these limitations, we believe that the data that were utilized are suitable for drawing our conclusions. Our BFH data were sufficiently reliable and while the national data does not allow for the desired level of precision, it is suitable for gaining a reasonable understanding of the breastfeeding situation in Japan.

Third, we did not analyze the reasons for breastfeeding dropout during hospital/clinic stay. The scrutiny of reasons for breastfeeding dropout will be a future challenge. In addition, a detailed analysis of mode of delivery among dropout mothers would be an interesting topic of study.

Fourth, it is impossible to analyze correlations with regard to type of delivery, etc. and type of feeding because the data were reported in a compiled manner. In order to analyze these data, it is necessary to collect a dataset from individual mothers. To accomplish this, we would need to obtain ethical clearance from the respective BFHs. This will be a future challenge for our research.

Finally, as shown in Figure 1, the breastfeeding rate of mothers after they leave the BHF facilities has dropped year-by-year. This may indicate that the high rate of breastfeeding in the BFH is due to selection, rather than the BFH activities. We should consider the reason for this decline in the breastfeeding rate. We speculate that the drop can be attributed to two reasons: the high rate of cesarean section deliveries at BFHs and provider fatigue after BFH certification. According to our data, the percentage of cesarean deliveries increased in 2007 and 2010. Prior et al. pointed out a negative association between cesarean delivery and breastfeeding in their systematic review article [28]. In addition, studies in Sweden and Austria have shown that cesarean section deliveries are linked to greater risk of breastfeeding complications [29,30]. Thus, we speculate that the increase of cesarean delivery is the main contributing factor for the decrease in breastfeeding rate. As Yamada et al. pointed out in their survey of one Japanese BFH, adverse effects of cesarean deliveries may contribute to the increased breastfeeding dropout [31]. In Japan, the proportion of cesarean delivery is gradually increasing [32,33], which may have a negative effect on the national breastfeeding rate. Thus, we should consider special support for mothers who delivered by cesarean section during hospital stay including close counseling, and follow-up care after discharge, including individual home visits for mental support in order to mitigate the collapse of breastfeeding. As for provider fatigue, we speculate that staff at BFHs may experience carelessness after certification. Although a more detailed interview survey would be needed to confirm the extent to which this exists, a training program for staff after certification could be a useful for reducing staff carelessness.

Conclusions

In our survey of Japanese BHFs, we found that the breastfeeding rate at one month of age was greater than 75%, which surpassed the national average of less than 50%. The median length of hospital stay for delivery at BHFs was 5 days (1 day less than other delivery facilities) is sufficient for copious breast milk secretion to develop in mothers.

The strength of Japan's BFHs in breastfeeding is that they are supported in both the legislative and structural framework. In the current situation, BFH activities in Japan can play an important role in increasing the breastfeeding rate. Even though BFHs account for only 2% of delivery facilities in Japan, the wider implementation of BFH activities in delivery facilities, with special support to mothers who delivered by cesarean section, would be a useful strategy for achieving the national target of a 60% breastfeeding rate at one month of age.

Abbreviations

BFH: Baby-friendly hospital; JBA: The Japan Breastfeeding Association; MCH: Maternal and child health; MHLW: Ministry of health labour and welfare.

Competing interests

The authors declare that they have no competing interests to report.

Authors' contributions

TY had a major role in designing the study and data analysis. KT had a major role in data analysis and interpretation of the data, and was the lead writer of this manuscript. YY was co-supervisor of all aspects of study implementation. All authors read and approved the final manuscript.

Acknowledgement

We thank Ms. Michiko Nagayama, the secretariat of Japan Breastfeeding Association for supporting our research and all the registered Baby Friendly Hospitals in Japan for the data provision. We also thank Prof. Fumiki Hirahara, Department of Obstetrics&Gynecology, Yokohama City University and Prof. Shunsaku MIZUSHIMA, Department of Epidemiology and Public Health, Yokohama City University for their advices on ethical clearance.

Author details

[1]Department of Pediatrics, Nerima Hikarigaoka Hospital, 2-11-1 Hikarigaoka, Nerima-ku, Tokyo 179-0072, Japan. [2]Department of Epidemiology and Public Health, School of Medicine, Yokohama City University, 3-9 Fukuura, Kanazawa-ku, Yokohama-shi, Kanagawa 236-0004, Japan. [3]Department of Nursing, School of Health Sciences, Kibi International University, 8 Igacho, Takahashi-shi, Okayama 716-8508, Japan. [4]The Japan Breastfeeding Association, 3-9-4 Arai, Nakano-ku, Tokyo 165-0026, Japan.

Received: 8 September 2012 Accepted: 12 November 2013
Published: 15 November 2013

References

1. *Ten Steps to Successful Breastfeeding*; http://www.unicef.org/newsline/tenstps.htm.
2. WHO, UNICEF: *Baby Friendly Hospital Initiative Revisited, Updated and Expanded for Integrated Care.* Geneva, Switzerland: WHO Press; 2009.
3. *10 Facts on Breastfeeding*; http://www.who.int/features/factfiles/breastfeeding/en/.
4. Ystrom E: **Breastfeeding cessation and symptoms of anxiety and depression: a longitudinal cohort study.** *BMC Pregnancy Childbirth* 2012, **12**:36.
5. *Baby Friendly Hospital Initiative (In Japanese)*; http://www.unicef.or.jp/about_unicef/about_hospital.html.
6. *2009 Community Health Basic Statistics (In Japanese)*; http://www.mhlw.go.jp/toukei/saikin/hw/hoken/kiso/21.html.
7. Nakamura Y: **Maternal and child health handbook in japan.** *Japan Med Assoc J* 2010, **53**(4):259–265.
8. *Regional differences in Japan on delivery services (In Japanese)*; http://www.jaog.or.jp/sep2012/know/kisyakon/21_090408.pdf.
9. *Notice on Lump-sum Allowance for Childbirth and Nursing (In Japanese)*; http://www.mhlw.go.jp/stf/shingi/2r9852000000tr99-att/2r9852000000trj4.pdf.
10. Shigematsu Y, Hirano S, Hata I, Tanaka Y, Sudo M, Sakura N, Tajima T, Yamaguchi S: **Newborn mass screening and selective screening using electrospray tandem mass spectrometry in Japan.** *J Chromatogr B Analyt Technol Biomed Life Sci* 2002, **776**:39–48.

11. *2005 Infants Nutrition Survey (In Japanese)*; http://www.mhlw.go.jp/houdou/2006/06/h0629-1.html.
12. *Improvement of Measures for Maternal and Child Health, Annual Health, Labour and Welfare Report 2007–2008 (In Japanese)*. http://www.mhlw.go.jp/english/wp/wp-hw2/part2/p2c6s4.pdf.
13. *The Baby-Friendly Hospital Initiative*. http://www.unicef.org/programme/breastfeeding/baby.htm.
14. Cattaneo A, Buzzetti R: **Effect on rates of breast feeding of training for the baby friendly hospital initiative.** *BMJ* 2001, **323**:1358–1362.
15. WHO: *Breastfeeding counselling: A training course*. Geneva, Switzerland: WHO Press; 1993.
16. WHO: *Indicators for assessing breastfeeding practices*. Geneva, Switzerland: WHO Press; 1991.
17. Neville MC, Morton J: **Physiology and endocrine changes underlying human lactogenesis II.** *J Nutr* 2001, **131**(11):3005S–3008S.
18. *Summary of Vital Statistics*. http://www.mhlw.go.jp/english/database/db-hw/populate/index.html.
19. *Annual Estimate of Vital Statistics in 2010 (In Japanese)*. http://www.mhlw.go.jp/toukei/saikin/hw/jinkou/suikei10/index.html.
20. Academy of Breastfeeding Medicine Protocol Committee: **ABM clinical protocol #3: hospital guidelines for the use of supplementary feedings in the healthy term breastfed neonate, revised 2009.** *Breastfeed Med* 2009, **4**:175–182.
21. Committee for supplementation, Japan Breastfeeding Association: *Recommendation for the supplementation in shortage of breast milk*. Tokyo, Japan: Japan Breastfeeding Association; 2012.
22. Section on breastfeeding, American Academy of Pediatrics: **Breastfeeding and the use of human milk.** *Pediatrics* 2012, **129**:e827–841.
23. Watt S, Sword W, Krueger P: **Longer postpartum hospitalization options - who stays, who leaves, what changes?** *BMC Pregnancy Childbirth* 2005, **5**:13.
24. Masuya S, Nishii H, Miyake M, Inasa I: **Changes in the rate of weight loss and the use of supplementary feedings in healthy term breastfed neonates (In Japanese).** *J Osaka Med Center Res Inst Maternal Child Health* 2010, **26**:16–20.
25. Yamamoto H, Tanaka M, Takano M: **Understanding of breastfeeding by mothers who complaints the poor breast milk secretion (In Japanese).** *Bosei Eisei* 2009, **50**(1):110–117.
26. Wiegers T, Hukkelhoven C: **The role of hospital midwives in the netherlands.** *BMC Pregnancy Childbirth* 2010, **10**(1):80.
27. Cattaneo A, Burmaz T, Arendt M, Nilsson I, Mikiel-Kostyra K, Kondrate I, *et al*: **Protection, promotion and support of breast-feeding in Europe: progress from, 2002 to 2007.** *Public Health Nutr* 2010, **13**(6):751–759.
28. Prior E, Santhakumaran S, Gale C, Philipps LH, Modi N, Hyde MJ: **Breastfeeding after cesarean delivery: a systematic review and meta-analysis of world literature.** *Am J Clin Nutr* 2012, **95**(5):1113–1135.
29. Karlstrom A, Lindgren H, Hildingsson I: **Maternal and infant outcome after caesarean section without recorded medical indication: findings from a Swedish case–control study.** *BJOG* 2013, **120**(4):479–486.
30. Bodner K, Wierrani F, Grunberger W, Bodner-Adler B: **Influence of the mode of delivery on maternal and neonatal outcomes: a comparison between elective cesarean section and planned vaginal delivery in a low-risk obstetric population.** *Arch Gynecol Obstet* 2011, **283**:1193–1198.
31. Yamada M, Kasai Y, Sugimoto M: **Factors adversely associated with exclusive breastfeeding rate following cesarean delivery performed at a "baby-friendly hospital".** *J Japan Soc Perinat Neonat Med* 2013, **49**:282–287.
32. Ministry of Health Law, Japan: **Trends in the number of deliveries and percentage of caesarean operations in healthcare facilities, 1984–2008.** In *Health Statistics in Japan 2010 (In Japanese)*. Tokyo, Japan: Ministry of Health, Labour and Welfare, Japan; 2010:35.
33. Obstetric Care Reform Comittee, Japan Society of Obstetricians and Gynecologists: *Annual process of cesarean delivery rate in Japan (Japanese)*. Tokyo Japan: Japan Society of Obstetricians and Gynecologists; 2010.

doi:10.1186/1471-2393-13-207
Cite this article as: Yoda *et al.*: **Japanese trends in breastfeeding rate in baby-friendly hospitals between 2007 and 2010: a retrospective hospital-based surveillance study.** *BMC Pregnancy and Childbirth* 2013 **13**:207.

Letter

DOI: 10.5582/bst.2013.v7.6.294

Call for action for setting up an infectious disease control action plan for disaster area activities: Learning from the experience of checking suffering volunteers in the field after the Great East Japan Earthquake

Kenzo Takahashi[1,2,*], Mitsuya Kodama[2], Hideyuki Kanda[1]

[1] *Department of Epidemiology and Public Health, School of Medicine, Yokohama City University, Yokohama, Japan;*
[2] *Public Health Unit, Global Cooperation Institute for Sustainable Cities, Yokohama City University, Yokohama, Japan.*

Keywords: Earthquake, measles, transmission, screening

Summary: *After the Great East Japan Earthquake on March 11th, 2011, a journalist visited the disaster area with febrile symptoms and was diagnosed with measles of the D genotype, which is not indigenous to Japan. After continuing activities in disaster areas and Tokyo, 11 measles cases were reported, some of which were identified as genotype D. Meanwhile non-profit activities directed towards volunteers were offered including interviews to screen for subjective symptoms, check body temperature and advise volunteers to refrain from working in shelter areas during the period of sickness. As a consequence, disease transmission was controlled among volunteers. In disaster areas, anyone can be an infection vector. In order to prevent transmission of infectious diseases, a field action plan, which includes body temperature checks and standard precautions should be formulated and put into place. If the action plans are shared among local governments and non-governmental organizations (NGOs), they can become a norm and be expected to control infectious disease transmission.*

Almost two and a half years have passed since the earthquake and tsunami hit the Pacific coast of Tohoku on March 11th, 2011. As of July 1st, 2013, the death toll is reported to be approximately 15,883 with 2,654 persons still listed as missing (*1*).

A disaster affects everything, the control function of local governments may be lost and misrule may emerge because officers of local governments can themselves be victims. The Japanese experience this time is nothing short of misrule. Under such circumstances, it is noteworthy that many volunteers participated in aiding shelter residents.

Lessons for health should be learned and shared from all disasters in order to benefit future preparedness. As such, this disaster offered us an important lesson for when there is an influx of people into areas that have been affected by a disaster.

In this article, we review a case of measles importation in the disaster period and a response from a company in which non-profit activities for controlling infectious disease transmission were directed at volunteers. We conclude that simple activity guidelines in disaster areas, including precautions, are useful and should be shared internationally.

A case of measles importation into a disaster area

In April, 2011, news hit the Tohoku disaster area that a foreign journalist had visited with febrile symptoms (*2*), and had continued his/her activities in the disaster area and Tokyo, before finally being diagnosed with measles. The measles virus genotype of the journalist was D4, which is not indigenous to Japan. Fortunately, no measles outbreak was observed in the disaster area. However, 11 measles cases were observed in Japan thereafter, some of which were identified as the D4 genotype (*3,4*).

Neither the journalist's attitude to precautions nor his/her vaccine history were officially disclosed, so the relationship between his/her activities and measles virus dissemination is unclear. What is clear is that, since measles is contagious during the febrile period (*5*),

*Address correspondence to:
Dr. Kenzo Takahashi, Department of Epidemiology and Public Health, School of Medicine, Yokohama City University, 3-9 Fukuura, Kanazawa-ku, Yokohama, Kanagawa 236-0004, Japan.
E-mail: kenzo_gh@yokohama-cu.ac.jp or kt_intl_@ja2.so-net.ne.jp

the activities of the journalist should have been limited in order to prevent the dissemination of the pathogen.

A good practice for controlling infectious diseases

Lessons can be drawn from the non-profit activities offered by the company Carepro, which usually offers health check services. The objective of the company's activities in the affected area was to check the health status of volunteers and control infectious disease epidemics within the disaster area. When they started activities 17 days after the disaster, they found that among the more than 100 volunteers working there, some were suffering from influenza-like illnesses or enterocolitis. The staff from Carepro advised volunteers to check for subjective symptoms and take their body temperature each day. If volunteers felt ill, they were advised to refrain from working in shelters. Besides alleviating volunteers' fatigue, their activities contributed to controlling the incidence of infectious diseases among volunteers including influenza/ enterocolitis (from 14/100 to 1/100) (*6*) and halted the transmission of common infectious diseases to those affected by the disaster.

While other factors including improvement of the shelter conditions may have influenced the dramatic reduction in disease incidence, their experience in these focused activities is considered good practice for controlling infectious disease transmission.

Considering feasible means of disease prevention

When a disaster occurs, a range of different people tend to enter the affected area, including professional people such as police, rescue teams, medical teams, journalists and volunteers, any of whom can be a vector of infectious diseases (*7*). Any pathogen, including those that are vaccine preventable, can easily pass national borders.

In addition, in disaster areas, where resources are limited, it is difficult to both handle sophisticated medical techniques including detailed diagnosis and to force people coming from outside the disaster area to receive vaccinations and/or intensive medical checks. Existing guidelines are too complicated for local government officers in devastated regions to implement in the event of a disaster, because they are written in a problem-oriented, list-wise manner. Officers may be too exhausted to understand detailed guidelines and reorganize their plans while coping with difficult situations. (*8,9*).

Thus the simple method provided by Carepro, which includes checking body temperature and physical condition every day before starting volunteer work, is useful for public health activities. Learning from this lesson, more feasible means of preparation for coming disasters should be considered, in particular, with sharing experiences and lessons of troubles faced by local government officers. The formulation of simple action plans for field activities in which standard, reasonable and applicable precaution methods, which may be assumed even when the general population is suffering the effects of a disaster, should be included. If such action plans are circulated among local governments and non-governmental organizations (NGOs) which provide disaster-relief activities and training for the plan is repeated, then they may become a norm for safeguarding activities in disaster areas, which can be shared internationally.

In conclusion, every influx of population into disaster areas can be a vector for the transmission of infectious diseases. For preventing shelter residents from acquiring infectious diseases, it is recommended that action plans, in which basic health checks are included, are established and drilled.

References

1. National Police Agency, Japan. Damage situation and police countermeasures associated with 2011 Tohoku district - on the Pacific Ocean earthquake, March 11, 2012. Tokyo, Japan, 2012. (in Japanese)
2. Asahi Shimbun. Journalist with measles, visits disaster area. *http://www.asahi.com/health/news/TKY201104190416.html* (Accessed April 19, 2011). (in Japanese)
3. National Center of Infectious Diseases, Japan. Measles in earthquake disaster areas - For those planning to visit the quake and tsunami-hit areas of northern Japan. *http://idsc.nih.go.jp/earthquake2011/IDSC/20110426Emeasles.html* (accessed February 28, 2012).
4. WHO Western Pacific Region Office. Japan earthquake and tsunami Situation Report No. 32. WHO, Manilla, Phillipines, 2011.
5. Committee on Infectious Diseases. Measles. In: Red Book Report of the Committee on Infectious Diseases 28th ed. (Pickering LK, Baker CJ, Kimberlin DW, Long SS, eds.) American Academy of Pediatrics, Elk Grove Village, IL, 2003; pp. 444-455.
6. Fujitsu. Activity report of disaster victim assistance: Efforts by Carepro company. *http://jp.fujitsu.com/solutions/crm/crmate/report/carepro/* (accessed March 13, 2013). (in Japanese)
7. Takayama Y. Infection control measures in disaster areas. Japanese Journal of Infection Control. 2011; 20:962-971. (in Japanese)
8. The American Public Health Association. Control of communicable diseases, manual, 19th ed. APHA Press, Washington DC, 2008.
9. The Sphere Project. The Sphere Handbook 2011: Humanitarian Charter and Minimum Standards in Humanitarian Response. Practical Action Publishing, United Kingdom, 2011.

(Received October 11, 2013; Revised November 5, 2013; Accepted November 11, 2013)

Viewpoint

Growing Concerns With the Flow of Misinformation From Electronic Books

Kenzo Takahashi[1,2*], MD, MHS, PhD; Hideyuki Kanda[1*], MD, MPH, PhD; Shunsaku Mizushima[1*], MD, PhD

[1]Department of Epidemiology and Public Health, Graduate School of Medicine, Yokohama City University, Yokohama, Japan

[2]Advanced Medical Research Center, Yokohama City University, Yokohama, Japan

*all authors contributed equally

Corresponding Author:
Kenzo Takahashi, MD, MHS, PhD
Department of Epidemiology and Public Health
Graduate School of Medicine
Yokohama City University
3-9 Fukuura, Kanazawa-ku
Yokohama, 236-0004
Japan
Phone: 81 45 787 2610
Fax: 81 45 787 2609
Email: kt_intl_@ja2.so-net.ne.jp

Abstract

In 2012, several kinds of electronic books (e-books) became available in Japan. Since several major book retailers launched e-book businesses, it is expected that e-books will become a popular source of information in the country. However, we are concerned that e-books may also be a source of misinformation. In examining 24 available materials published by anti-vaccinists, "atopy businesses", and "wellness maintenance" authors, each was found to contain inaccuracies or misinformation. Thus far, such information is only available in printed books. If these books are scanned and circulated, or published in e-book format, this misinformation may circulate rapidly as e-book devices are becoming popular, and, consequently, harm people's health. We think that it is important for the government to formulate ethical guidelines for the publishing e-books with due consideration to freedom of expression.

(Interact J Med Res 2013;2(1):e10) doi:10.2196/ijmr.2541

KEYWORDS

misinformation; e-book; ethical guideline; anti-vaccinists; atopy business; wellness maintenance

Introduction

In 2012, several electronic book (e-book) devices became widely available in Japan [1]. Even though several e-book devices were previously available, it is expected that newly introduced e-books will become more popular because the devices are sold by some of the more popular book retailers in Japan who provide free access to retail websites. Their business model is designed to provide easier access to e-books than ever before. The only thing that a user has to do is to register a payment method. In 2016, it is expected that the number of e-book users will grow to 5 million (via e-book reader), 27 million (via tablet devices), and 80 million (via smartphone) [2]. Thus, it is expected that e-books will make access to information media more convenient.

In this regard, we are concerned that e-books may be a source of misinformation. Now that several self-publishing manuals are available, circulation of individual ideas without any scientific evidence via e-books is easy. In this article, we reviewed 3 topics of misinformation circulated by printed books that have been observed in Japan, and finally conclude that an ethical guideline for e-book publications should be considered.

We searched and examined all the printed books written in Japanese that were accessible via the Internet (in total 24 books). In this paper, we will discuss the 3 major topics of concern.

Vaccination

The first example of concern is vaccination (8 books). Japan has long history of distrust of vaccines [3-5]. Several anti-vaccinists, some with medical licenses and others without, published books that suggest that it is inappropriate for readers to vaccinate their children. Their structure of argument usually

contains both correct information and false recommendations and concluded that government recommendations are unsound. For example, some publications asserted that mumps vaccine is not recommended and natural infection is better than vaccine for acquiring immunity. They stand on the fact that low quality mumps vaccines caused severe side effects with poor prognosis including death. The current vaccine is recognized as safe. However, the aforementioned authors asserted that the data quality is not reliable. In addition, they did not alert readers to the risk of permanent hearing loss attached to mumps infection, for example. They asserted that severe consequences seldom occur since the number of reported cases is decreasing. They also claimed that even the measles vaccine is not necessary. Their point is that children can still be infected by measles even if they received the measles vaccine because immunity may diminish within several years after injection. In addition, they introduced a case of subacute sclerosing pan encephalitis that may have been caused by the measles vaccine and pointed out that the measles vaccine should not be recommended to all children because of its severe side effects. However, available epidemiological data including genotyping data do not suggest the measles vaccine virus as a possible cause of subacute sclerosing pan encephalitis [6]. The problem with this publication is that their discussions lack stochastic consideration. However, readers who do not recognize this flaw may follow these anti-vaccine recommendations, leaving their children vulnerable to vaccine targets.

Atopy Businesses

The second example is the "atopy businesses" (8 books) [7,8]. As the term "business" implies, books containing "atopy business" information are published for commercial reasons. They try to sell alternative therapy products such as specially treated foods, specially treated creams, and hot spring waters. They would show examples of rare cases of severe atopic dermatitis in a sensationalistic manner, and then conclude that steroids are a cause of severe diseases and should not be applied to human skin. Some of these publications claimed that, if the patients were left untreated by their products or treated by steroids, they would be sure to suffer from atopic dermatitis. An alternative therapy, that is, their own products, would be recommended. To high information seekers such as parents who worry about their children with or acquiring allergies [9], these texts look impressive and trustworthy. However, these alternatives are not medically evaluated and are generally expensive. Patients following these unproven treatment regimens would suffer financially and physically, as their conditions may worsen with these new treatments.

Wellness Maintenance Books

The third example is "wellness maintenance books"(8 books). These books are written by qualified medical doctors and demonstrate how to live a healthy life by following some extreme life habits. In one example, the author recommended that readers eat food only once a day, leaving one's body fasted. The possibility and concerns related to the consequence of hypoglycemia or hypoalbuminemia, for example, were not thoroughly discussed. In addition, they claimed that malnutrition could be averted by eating foods in their natural state, including unpeeled vegetables and unprocessed fish with the fish head or internal organs because the authors maintain that they are perfect nutritional foods in their natural form.

Ethical Publishing Guidelines

Some of the above mentioned content is already sold in e-book format [10]. However, in cases where they are not sold in an electronic format, used books are still sold through the Internet [11]. People may take advantage of the convenience of e-books due to the availability of self-publishing manuals, scan these books, and sell them illegally (sale of scanned books is illegal in Japan). To make matters worse, the public may write and publish their own e-books with misleading content, thus facilitating the dissemination of misinformation.

As Geraldine et al observed, "written information on medicines can be interpreted by consumers in ways that may lead to anxiety or apprehension, and a refusal of prescribed medicines" [12]. Thus, the prevalence of e-books may have a detrimental impact on human health. Fortunately, at the time of writing this paper, these books are not yet published electronically. While it is an ideal time to create legislation to punish publishers/authors who caused harmful effects to people's health, it is difficult to judge the causal relationships between published books and health effects. We recommend that the government should promptly formulate ethical guidelines targeted at the content of e-books, listing that disputable information that should not be allowed in e-books with due consideration to freedom of expression/publication. Publishing associations should be watchful of the material that they publish based on the stated ethical guidelines and control the distribution of disreputable e-books.

Acknowledgments

This work was partly supported by the grant for Research and Development Project III (No. 13) of Yokohama City University, Japan.

Conflicts of Interest

None declared.

References

1. White paper information and communications in Japan. Tokyo: Ministry of internal affairs and communication; 2012 Mar 9. URL: http://www.soumu.go.jp/main_sosiki/joho_tsusin/eng/Releases/Telecommunications/130305_02.html [accessed 2013-05-22] [WebCite Cache ID 6GoMUQHKF]
2. Institute of Internet Media. eBook Marketing Report 2012 (Japanese). Tokyo, Japan: Impress R&D company; Jul 26, 2012.
3. Parry J. No vaccine for the scaremongers. Bull World Health Organ 2008 Jun;86(6):425-426 [FREE Full text] [Medline: 18568268]
4. Igarashi T. Science Links Japan. 2008 Feb. A vaccination system below the global standard URL: http://sciencelinks.jp/content/view/607/241/ [accessed 2013-05-09] [WebCite Cache ID 6GU06eCTO]
5. Takahashi K, Ohkusa Y, Kim JY. The economic disease burden of measles in Japan and a benefit cost analysis of vaccination, a retrospective study. BMC Health Serv Res 2011;11:254 [FREE Full text] [doi: 10.1186/1472-6963-11-254] [Medline: 21978107]
6. World Health Organization. Subacute sclerosing panencephalitis and measles vaccination. Weekly Epidemiological Records 2006;81(2):17-18.
7. Takehara K. [Modification evil drug of topical steroid and atopy business]. Arerugi 2001 Aug;50(8):654-656. [Medline: 11579516]
8. Kaburagi Y, Shimada Y, Takehara K. An investigation of the views about atopy business in atopic dermatitis patients. Jpn J Dermatol 2000;110(8):1277-1282.
9. Bernhardt JM, Felter EM. Online pediatric information seeking among mothers of young children: results from a qualitative study using focus groups. J Med Internet Res 2004 Mar 1;6(1):e7 [FREE Full text] [doi: 10.2196/jmir.6.1.e7] [Medline: 15111273]
10. Nagumo Y. [Hunger makes people healthy]. Tokyo: Sun Mark publishing; 2012.
11. Ogawa H. [Understanding how to treat atopic dermatitis-Parol evidence by 3500 patients who recovered from steroid epidemic]. Tokyo: Kanki-publishing; 1994.
12. Peterson G, Aslani P, Williams KA. How do consumers search for and appraise information on medicines on the Internet? A qualitative study using focus groups. J Med Internet Res 2003 Dec 19;5(4):e33 [FREE Full text] [doi: 10.2196/jmir.5.4.e33] [Medline: 14713661]

Edited by G Eysenbach; submitted 21.01.13; peer-reviewed by C Bermúdez-Tamayo, D Zulman; comments to author 13.02.13; revised version received 18.03.13; accepted 27.04.13; published 24.05.13

Please cite as:
Takahashi K, Kanda H, Mizushima S
Growing Concerns With the Flow of Misinformation From Electronic Books
Interact J Med Res 2013;2(1):e10
URL: http://www.i-jmr.org/2013/1/e10/
doi:10.2196/ijmr.2541
PMID:

Health Policy 110 (2013) 198–206

Contents lists available at SciVerse ScienceDirect

Health Policy

journal homepage: www.elsevier.com/locate/healthpol

World Health Assembly Agendas and trends of international health issues for the last 43 years: Analysis of World Health Assembly Agendas between 1970 and 2012

Tomomi Kitamura[a], Hiromi Obara[a], Yoshihiro Takashima[b], Kenzo Takahashi[c], Kimiko Inaoka[a], Mari Nagai[a], Hiroyoshi Endo[d], Masamine Jimba[e], Yasuo Sugiura[a,*]

[a] National Center for Global Health and Medicine, 1-21-1 Toyama, Shinjuku-ku, Tokyo 162-8655, Japan
[b] World Health Organization, Western Pacific Regional Office, 1000 Manila, Philippines
[c] Department of Epidemiology and Public Health, Yokohama City University Graduate School of Medicine, 3-9 Fukuura, Kanagawa-ku, Yokohama, Kanagawa 236-0004, Japan
[d] Department of International Affairs and Tropical Medicine, Tokyo Women's Medical University, 8-1 Kawada-cho, Shinjuku-ku, Tokyo 162-8666, Japan
[e] Department of Community and Global Health, Graduate School of Medicine, The University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo 113-0033, Japan

ARTICLE INFO

Article history:
Received 15 April 2012
Received in revised form 8 December 2012
Accepted 10 December 2012

Keywords:
World Health Organization
World Health Assembly
Agenda items
International health issues

ABSTRACT

Objective: To analyse the trends and characteristics of international health issues through agenda items of the World Health Assembly (WHA) from 1970 to 2012.
Methods: Agendas in Committees A/B of the WHA were classified as Administrative or Technical and Health Matters. Agenda items of Health Matters were sorted into five categories by the WHO reform in the 65th WHA. The agenda items in each category and sub-category were counted.
Results: There were 1647 agenda items including 423 Health Matters, which were sorted into five categories: *communicable diseases* (107, 25.3%), *health systems* (81, 19.1%), *non-communicable diseases* (59, 13.9%), *preparedness surveillance and response* (58, 13.7%), and *health through the life course* (36, 8.5%). Among the sub-categories, HIV/AIDS, noncommunicable diseases in general, health for all, millennium development goals, influenza, and international health regulations, were discussed frequently and appeared associated with the public health milestones, but maternal and child health were discussed three times. The number of the agenda items differed for each Director-General's term of office.
Conclusions: The WHA agendas cover a variety of items, but not always reflect international health issues in terms of disease burden. The Member States of WHO should take their responsive roles in proposing more balanced agenda items.

1. Introduction

The World Health Organization (WHO) has the objective of attaining the highest possible level of health for all [1]. The World Health Assembly (WHA) is attended by delegations from all 194 Member States in May each year, and functions as the supreme decision-making body of the WHO [2]. The main committees of the WHA are: Committee A – to deal predominantly with programme matters; and Committee B – to deal predominantly with administrative, financial, and legal matters [1]. Since the WHA determines the policies of the WHO and can influence the national policies of each member state, the WHA agenda have to be carefully selected to achieve the objective of the WHO.

* Corresponding author at: Bureau of International Medical Cooperation, National Center for Global Health and Medicine, 1-21-1 Toyama, Shinjuku-ku, Tokyo 162-8655, Japan. Tel.: +81 3 3202 7181; fax: +81 3 3205 7860.
E-mail address: yasugiura@gmail.com (Y. Sugiura).

0168-8510/$ – see front matter © 2012 Elsevier Ireland Ltd. All rights reserved.
http://dx.doi.org/10.1016/j.healthpol.2012.12.008

However, the WHA is not the only decision-making body of the WHO. The Executive Board has the responsibility to implement the decisions and policies of the Health Assembly and to act as its executive organ, but it also assumes the role of submitting advice or proposals to the assembly and preparing the agenda of its meetings according to the procedural rules of the WHA [1]. The Executive Board prepares the provisional agenda of each WHA session after considering the proposals submitted by the Director-General [1]. The agenda for the forthcoming WHA is agreed upon by the Executive Board and they adopt the resolutions to the forthcoming WHA in every January. The rules of procedure of the Executive Board say that the provisional agenda of each WHA session include any item proposed by a Member State or Associate Member of the WHO, and any item proposed by the Director-General [1]. The WHA has discussed a variety of health issues as "Technical and Health Matters" [3].

WHO has six regional offices for Africa, the Americans, South-East Asia, Europe, the Eastern Mediterranean, and the Western Pacific. Each Regional office holds a Regional Committees, which generally meets once a year [4]. The Regional Committees allow detailed discussions among Member States on specific needs, and they are considered platforms that can submit proposals to the Executive Board. They can tender advice, through the Director-General to the WHO on International Health Matters which have wider than regional significance [1].

In the history of international health, several landmarks are reflected in these WHA agendas. The typical ones are primary health care (PHC) at Alma-Ata in 1978, smallpox eradication in 1979, polio eradication launched in 1988, and the Framework Convention on Tobacco Control in 2004 [5]. Several articles have referred to the history and the policy of the WHO on international health issues [6–9]. However, there is no chronological analysis of the agenda items of the WHA from a long-term point of view. Also, there is no clear evidence and justification why certain agenda items were selected among the various important health issues in the world.

We assumed that the agenda items of the WHA would reflect trends and characteristics of international health. In this article, we will analyse the WHA agenda items between 1970 and 2012 from the viewpoints of chronological change, categories, and relationship with major health issues milestones such as the declaration of Alma-Ata and Millennium Development Goals (MDGs). This study will provide supportive evidence to set balanced WHA agenda items in the future.

2. Methods

We reviewed the agenda items in the WHA from 1970 to 2012. Two data sources were used: agenda items from 2004 (57th WHA) to 2012 (65th WHA) were extracted from the WHO internet site [10] and agenda items from 1970 (23rd WHA) to 2003 (56th WHA) were extracted from printed reports, namely the *World Health Assembly Summary Records of Committees*, published annually by the WHO (WHA23/1970/REC/3 to WHA56/2003/REC/3).

Agenda in the WHA consist of two areas: the Plenary and the Committees A and B. The Plenary decides on certain important items such as adoption of the agenda and allocation of items to the Committees A and B. Since the Plenary is not a place to discuss technical and health issues, agenda items in the Plenary were excluded in our analysis. Then each agenda item in Committees A and B was considered as data for analysis.

All agenda items in Committees A and B were labelled as Administrative Matters or Technical & Health Matters. We labelled the agenda items about financial, staffing, and legal matters, collaboration within the United Nations system, health conditions of the occupied Palestinian territory, and WHO organizational issues as Administrative Matters, regardless of whether they were in Committee A or B. Administrative Matters were analysed only quantitatively in this study. Other agenda items besides Administrative Matters were labelled as Technical & Health Matters. Then, we classified Technical & Health Matters into two groups: Health Matters and Progress Reports. Here, Progress Reports are follow-ups of the previous WHA agenda items, usually responding to the requests of previous resolutions adopted by the WHA in the past. We labelled other agenda items besides Progress Reports as Health Matters, which were discussed by the WHA as the important international health issues in that year.

For all Health Matters, categories and sub-categories were created in order to analyse Health Matters further. Categories and sub-categories are set out in Table 1. Categories were drawn from one of the 65th WHA agendas entitled "WHO reform" [11]. The five categories are (1) *communicable diseases*, (2) *noncommunicable diseases*, (3) *health through the life course*, (4) *health systems*, and (5) *preparedness, surveillance and response*. We added another category, (6) *others*, for agenda items which did not fit in these five categories. The sub-categories were developed with reference to the *Handbook of Resolutions and Decisions of the World Health Assembly and Executive Board, Volumes I, II, and III* [12–14], and also in light of the functions of the WHO according to its Constitution, Article 2 [1]. In this labelling system, the *health systems* category includes items related to health policies, such as PHC, health for all by 2000, and MDGs, since health systems are strongly connected to the health policies. The sub-category 'Strengthening health systems' was defined according to the concept provided by the WHO in the *Everybody's Business: Strengthening health systems to Improve Health Outcomes, WHO's Framework of Action* [15]. The *noncommunicable diseases* category consists of 10 subcategories. One of them that includes the agendas entitled "prevention and control of noncommunicable diseases" or similar titles, was named as "noncommunicable diseases in general" to avoid any confusion between category and subcategory. Health issue milestones in the each category were selected from several publications and web sites [16–19].

Each agenda item of Committees A and B from 1970 to 2012 was entered into Microsoft Excel. Then each item

Table 1
Numbers and years of Health Matters by categories and sub-categories.

Categories of Health Matters	Sub-categories	No.	1970s	1980s	1990s	2000s	2010s
Communicable diseases (107/25.3%)	HIV/AIDS	14		86, 88, 89	92	00, 01, 02, 03, 04, 05, 06, 06, 06	11
	Tuberculosis	7		83		00, 05, 07, 09	10, 10
	Malaria	9	70, 75, 76, 78		97, 99	05, 07	11
	Smallpox	20	71, 72, 73, 76, 77, 78	80	96, 99	00, 01, 02, 03, 04, 05, 06, 07, 08	10, 11
	Polio	10			99	00, 02, 03, 04, 05, 06, 07, 08	12
	Neglected Tropical Diseases	23	76, 76, 77		94, 97, 97, 97, 98, 98	01, 02, 02, 02, 03, 03, 04, 04, 04, 07	10, 10, 11, 12
	Vaccination (EPI[a])	7	78			00, 02, 05, 08	11, 12
	Cholera	2	71				11
	Sexually transmitted infections	2	78			06	
	Disinsection of aircraft	2	70, 71				
	Others	11	70, 70, 76, 77, 78		98	01, 02	10, 10, 10
Noncommunicable diseases (59/13.9%)	Noncommunicable diseases in general	10			98	00, 07, 08	10, 11, 12, 12, 12, 12
	Cancer	6	73, 74, 75, 77	82		05	
	Mental health	5	77, 78	86		02	12
	Tobacco	10	70, 71	86	99	00, 01, 01, 03, 06, 08	
	Alcohol	6	79	83		05, 07, 08	10
	Road safety	2	76			04	
	Disability	8	72, 76	86		01, 03, 05, 06, 09	
	Policy/strategy of nutrition	4	77, 78			02, 04	
	Iodine deficiency	2		86	99		
	Others	6	76, 78			03, 06, 07	
Health through the life course (36/8.5%)	Infant and young child nutrition	12		80, 81, 82, 83		00, 01, 02, 02, 05, 06	10, 11
	Reproductive health	5	78		91	04, 08	12
	MCH[b] including newborn health	3	79		92	07	
	Birth defects	2	78				10
	Child and adolescent health	2				03, 06	
	Occupational health	4	71, 72, 76				07
	Ageing	2				02, 05	
	Others	6				04, 08	11, 11, 12, 12
Health systems (81/19.1%)	Primary health care	5	76, 76, 79			03, 09	
	Health for all by 2000	18	79	81, 81, 83, 84, 86, 86, 86, 86, 86, 89	92, 95, 95, 96, 97, 97, 98		
	Millennium developmental goals	9				02, 03, 05, 08, 09	10, 11, 12, 12
	Strengthening health systems	32	70, 71, 72, 72, 75, 76, 78, 78, 78, 78, 78, 78	80		00, 01, 01, 02, 02, 03, 03, 04, 05, 05, 05, 06, 06, 07, 07, 07	10, 10, 11
	Rational use of drugs	3		86, 88		07	
	Policy/strategy of drugs	6	78		99	00, 01, 02, 03	
	Essential drugs	4	79	82, 84	92		
	Counterfeit medical products	4				08	10, 11, 12
Preparedness, surveillance and response (58/13.7%)	Influenza	10				03, 05, 06, 07, 07, 08, 09	10, 11, 12
	International health regulations	12	70	81	96, 99	03, 05, 07, 08, 09	10, 11, 12
	Surveillance	4	71, 73, 74, 77				
	Water	5	70, 71, 72	80			11

Table 1 (*Continued*)

Categories of Health Matters	Sub-categories	No.	1970s	1980s	1990s	2000s	2010s
	Human environment	9	71, 72, 73, 74, 76, 78, 78, 79		92		
	Chemical management	2	79				10
	Climate change	2				08, 09	
	Nuclear issues	3			91, 93	01	
	Codex Alimentarius Commission	2				03, 06	
	Food safety	2				00	10
	Emergency	3				05, 06	12
	Others	4		87, 88	90	02	
Others (82/19.4%)	Health promotion	5				00, 01, 04, 06, 07	
	Psychosocial factors and health	2	75, 76				
	Dental health	2	75, 78				
	Intellectual property	7		82		03, 06, 07, 08, 09	10,
	Technical cooperation	4		81	90, 99	00	
	Development and coordination	3	77, 78				
	WHO's role and responsibilities	5	73, 74			06, 07	10,
	Others related research	3	73			05, 06	
	Quality/Safety of drugs	7	70, 71, 71, 72, 73		92	04	
	Narcotic and psychotropic substances	3	77	80, 86			
	Drug dependence	3	71, 72, 73				
	Cloning in human health	3			97, 99	00	
	Human organ and tissue transplantation	3		87		04	10
	Others related to drugs and biological products	15	70, 71, 72, 73, 75, 75, 76	84, 89		03, 04, 05, 05, 07	10
	Others related to social and environmental health	4	71			06, 09	12
	International classification of diseases	2	76		90		
	World health situations	4	70, 72, 74, 76				
	World summit on sustainable development	2				02, 03	
	Others	5	74, 77			02, 07	12

Figure and percentage of each category show the number of agenda items for the category followed by it as a percentage of all agenda items for Health Matters. The numbers in the decades column are the last two digits of the year. Where the year is repeated, there was more than one agenda item that year.

[a] Expanded Programme on Immunization.

[b] Maternal and Child Health.

was classified under Health Matters, Administrative Matters, and Progress Reports. The number of Administrative Matters and Progress Reports were counted. The Health Matters were classified into the categories. A sub-category was created when there were at least two of the same agenda items within a category. Each Technical Matter item was classified in a relevant category and sub-category, then the number of agenda items in each category and sub-category was counted.

An agenda item covered by a single category was placed into the relevant category. In cases where an agenda item could apply to more than one category, we read the Report written by the Secretariat and related resolution of the agenda item, and decided on the most appropriate category for the agenda item. Therefore, no agenda item was placed in more than one category.

3. Results

3.1. Number of agenda items from Committees A & B by year from 1970 to 2012

There were 1647 agenda items in Committees A and B of the WHA from 1970 to 2012; they consisted of 605 Technical and Health Matters and 1042 Administrative Matters.