Strengthening Global Health Architecture: Proposed Action for G7

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Executive summary

Human security is now more than ever at the core of the global policy agenda. In the face of numerous global risks, such as terrorism, refugee and migration crises, climate change and disasters, the global community must take collective action to protect the vital core of all human lives, in addition to ensuring security at national levels.

As highlighted by the recent outbreaks of Ebola, MERS and Zika virus, emerging infectious diseases are no longer unexpected in today's world. To prevent devastating consequences of crises such as the recent Ebola outbreak, the current global health architecture needs to be strengthened to foster effective collaborations between governments, international organizations, the private sector, and civil society. In particular, there is an urgent need to establish resilient and sustainable health systems that fulfil the promise of universal health coverage (UHC) while ensuring that women, in particular, have access to essential health services. As the amount of official development assistance (ODA) from major donor governments plateaus, the balance between bilateral support and support for global functions (such as the provision of global public goods) should be re-evaluated and optimized. In addition, the private sector should be more engaged, to play an active role in strengthening health systems. In this context, the global community is looking to Japan, where UHC is central to development policy, to further the international discussion on the strengthening of global health architecture.

In August 2015, the Ministry of Health, Labour, and Welfare of Japan established a global health architecture strengthening working group (WG 1) to enable Japan, as G7 host country, to better contribute to discussions at the 2016 G7 Ise-Shima Summit and the G7 Kobe Health Ministers' Meeting. This paper summarizes the WG's key conclusions on the most significant challenges facing the current global health architecture and proposed actions for the G7.

The WG recommends the following fundamental plans of action.

(1) <u>Establish an architecture at national, regional and global levels that is able to properly prepare for and respond to public health emergencies</u>
    A   Strengthen health care system capacity in preparedness for and to better respond to public health emergencies
    B   Allocate more investment from aid organizations (e.g., Global Fund and GAVI Alliance) to health system strengthening
    C   Secure emergency response resources: efficient use of new funds (e.g., CFE and PEF), further investment of official development assistance toward global functions (such as global public goods), exploration of new funding sources (e.g.,

international solidarity levy and private charitable funds), and strengthening of the supply chain system

(2) <u>Reinforce strong and sustainable health systems: focus support on policies that address diverse needs and increased health care costs in ageing societies</u>
   A   Establish a global platform to share countries' experiences, both positive and negative, with regard to health system sustainability in ageing societies
   B   Enhance sustainable mobilization of domestic resources within health systems by supporting, in particular, policy-making that incorporates collaboration and dialogue between healthcare professionals and financial authorities in developing countries.

(3) <u>Establish a monitoring and accountability framework for UHC</u>
   A   Enable countries to design country-specific monitoring and accountability frameworks, rather than instituting frameworks driven by aid countries or aid organizations, through a collaborative process that includes the aid recipients and aid organizations that provide bilateral aid for health system strengthening (e.g., support for strengthening IHR core capacities)
   B   Strengthen professional and organizational capabilities to enable evaluation of health systems and various health system aspects, including health technologies (e.g., Health technology assessment)

(4) <u>Promote the development of diagnostics, drugs, and vaccines for diseases areas where market mechanisms are insufficient (e.g., neglected tropical diseases (NTDs) and diseases threatened by antimicrobial resistance (AMR))</u>
   A   Develop a mechanism that identifies high priority diseases and projects
   B   Optimize the regulatory framework for drugs and vaccines that address NTDs and AMR, and promote international harmonization
   C   Strengthen mechanisms that incentivize development and secure funding for such mechanisms

1. Introduction

In the face of an unprecedented combination of global risks, including terrorism, refugee and migration crises, and climate change and disasters, the global policy agenda has shifted to human security, the protection of the vital core and dignity of all human lives, in addition to critical issues of national security. Health is a critical element of human security as its existence fosters wellbeing and enables individuals to pursue life goals of personal value; thus, the protection of health of all individuals contributes directly to furthering human security. In this regard, global health is an entry point for improving human security.[1,2] As highlighted by the recent outbreaks of Ebola, MERS and Zika virus, emerging infectious diseases are no longer unexpected in today's world. Increasing global population mobility has increased the risk of the spread of infectious diseases, and poses potential threats to national security and social economy, in addition to health systems.[3] In order to quickly and effectively respond to such public health emergencies, the current global health architecture needs be strengthened to foster effective collaborations between governments, international organizations, the private sector, and civil society. In particular, there is an urgent need to establish resilient and sustainable health systems that fulfil the promise of universal health coverage (UHC, defined as a system in which all people have access to quality health services without financial hardship) while ensuring that women, in particular, have access to essential health services.

Japan has long played a lead role in global efforts to strengthen the global health architecture. For example, Japan's leadership at the 2000 G8 summit in Okinawa, Japan, put the need for global action and new financing for infectious diseases onto the agenda for the first time in G8 summit history, leading to the establishment of the Global Fund to Fight AIDS, Tuberculosis, and Malaria, the world's largest financer of anti-AIDS, TB and malaria programs.[4] In recent years, Japan's commitment to health systems strengthening as critical to global development policies has resulted in the United Nations' member states agreeing to include UHC in the Sustainable Development Goals (SDGs)—the post-2015 development agenda.[5] The 2015 Nobel Prize in Physiology or Medicine was awarded to a Japanese scientist for the discovery of Ivermectin, which is effective against different parasites in tropical areas, an achievement that illuminated Japan's strength in research and development (R&D). Through these key actions, Japan's leadership in global health has been highly praised around the world, and there are strong expectations that Japan will continue to play a more proactive role.[6]

Japan will host the G7 Ise-Shima Summit in May 2016, followed by the G7 Kobe Health Ministers' Meeting in September. As the first G7 meetings since the adoption of the SDGs, these events are important opportunities for Japan, as host country, to play a leading role in putting global health architecture strengthening onto the agenda while supporting the enhancement of Japan's capacity to effectively contribute to global efforts. In August 2015, the Ministry of Health, Labour, and Welfare of Japan established a global health architecture strengthening working group (WG) to enable Japan to better contribute to discussions at the G7. This paper summarizes the WG's key conclusions on the most significant challenges facing the current global health architecture and proposed actions for the G7.

2. Systematic analysis of challenges to strengthening global health architecture

To propose actions that fully address the current challenges surrounding global health architecture, we systematically analysed the current global health architecture by examining recommendations and inputs from various studies on global health, recent first-hand discussions on UHC and human security,[7,8] lessons from the Ebola crisis and recommendations on new global preparedness and response to health emergencies,[9-12] debates around the WHO's 2015 *World Report on Ageing and Health*,[13] and recent outcomes from the 2015 G7 Health Ministers' and Science Minister's Meetings in Berlin.[14,15] Based on this analysis, we propose the following major *goals* and *actions* to improve the global health architecture.

Goals (what should be done) to accelerate progress toward strong global health architecture:
    A   Strengthen preparedness for and responses to threats to human security
    B   Strengthen UHC to achieve sustainable and robust health care systems
    C   Promote innovation for global health and development of public goods

Actions (how to implement the goals) that foster effective efforts to address global health architecture challenges:
    1   Leadership and coordination (e.g., enable different actors to work together effectively through consensus building, set common priorities and guidelines for activities to achieve common goals)
    2   Accountability (e.g., define responsibilities of different actors, monitor performance, and request that each actor achieve its predefined objectives)
    3   Sustainable investment (e.g., secure financial and technical assistance for countries and vulnerable populations in need)

Based on this 3x3 matrix, using iterative brainstorming and the Delphi technique,[16] we identified 25 global challenges to the strengthening of global health architecture, as shown in Table 1.

3. Four prioritized challenges to strengthening global health architecture
To propose solutions that broadly address a variety of challenges, we consolidated the challenges that were considered highly interdependent. In addition, multiple WG members prioritized these consolidated challenges, according to the following evaluation criteria:

- Importance of challenges (e.g., Can addressing the issue improve health systems and/or reduce disease burden? Are cost-effective solutions currently available?);
- Political, technical, and financial feasibility (e.g., Is there a political/technical/financial probability that G7 or even G20/G77 can address the challenge?);
- Time from action to solution (e.g., Can political focus on addressing the issue be sustained throughout the 1-2 years Japan takes the leading role?); and
- Japan's strength/priority (e.g., Does Japan have a strength to contribute in addressing the challenge or can Japan benefit from efforts to address the challenge?).

(Japan's strengths and benefits are included in these evaluation criteria in order to strengthen Japan's view and regulatory functions for global health issues through this G7 Summit.)

Based on these criteria, we propose the following four prioritized challenges:

(1) <u>Establish an architecture at national, regional and global levels that is able to properly prepare and respond to public health emergencies</u>
The national health strategies of most countries do not include strengthening of health system capacity in preparedness and resilience to respond to public health emergencies. Additionally, about 80% of ODA for health care-related issues is spent on country-specific aid, while only 20% is used for global public goods (e.g., R&D, preparedness and response for public health emergencies, international collaboration to strengthen health care system).[17] As ODA is reaching a ceiling in many countries, we need to re-examine the proportion of aid allocated to global public goods vs. country-specific goals, as well as the role of the private sector.

(2) <u>Reinforce strong and sustainable health systems: focus support on policies that address diverse needs and increased health care costs in ageing societies</u>
Building and maintaining strong health systems that can respond to public health emergencies and disasters is an important health policy challenge in every country. Implementation of UHC in developing countries alongside population ageing creates concern that public health care systems are facing increasing financial burdens that may lead to a depletion of their financial resources. We need to establish a global platform to share countries' experiences with regard to health system sustainability and promote collaborations between health care professionals and financial authorities at the national and regional levels.

(3) <u>Establish a monitoring and accountability framework for UHC</u>
To respond to public health emergencies and develop sustainable health care systems, it is essential to develop and strengthen the monitoring and accountability framework for health care systems. However, aid countries, international organizations, and global health professionals tend to lead the development of health care evaluation criteria and monitoring systems, preventing the specific needs of each country from being fully incorporated. Many of these frameworks have standardized criteria and monitoring systems at the global level and require participating countries to collect and submit data. These systems, however, do not provide detailed action plans (e.g., analysis of collected data, identification of challenges based on analysis, development of solutions, and implementation of monitoring). Instead, they tend to focus on data collection itself and do not contribute to strengthening accountability of government and aid agencies and improving health systems. At the same time, countries continue to lack the specialized techniques and organizational capability to evaluate health care system functioning independently. Increasing accountability within each country requires attention as well.

(4) Promote the development of diagnostics, drugs, and vaccines for disease areas
     where market mechanisms are insufficient (e.g., neglected tropical diseases (NTDs)
     and diseases threatened by antimicrobial resistance (AMR))
     R&D to address NTDs (e.g., Ebola) and AMR remains insufficient because of low
     market potential and inadequate returns on development investments. While there
     are several funds available to support relatively small R&D projects, there is little
     coordination between projects. Moreover, collaborations between R&D
     organizations are limited, and an efficient system to support R&D has not yet been
     established.

4. Proposals for the G7
For each of the four prioritized challenges, we suggest the following proposals and
objectives to the G7. Examples of action plans are listed beneath each proposal. Action
plans for which Japan should take the lead among G7 countries are indicated as <Japan>.
Leadership in these areas will concurrently support the strengthening of Japan's capacity to
respond to global health challenges.

(1) Establish an architecture at national, regional and global levels that is able to
     properly prepare and respond to public health emergencies

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Objectives
◆ Countries include emergency preparedness in their national health strategies
◆ Regulations related to IHR (International Health Regulations) are fully implemented;
   WHO's capability for emergency response are enhanced; and the roles of different
   agencies are clear and seamlessly coordinated at both global and national levels
◆ Sufficient resources are secured for global public goods, including emergency
   preparedness and response

[Examples of action plans]
A   Strengthen health care system capacity in preparedness and response against public
    health emergencies
    •   G7 should support countries to improve IHR core capacities to prepare and
        respond to public health emergencies (e.g., diagnosis, surveillance, human
        resources development), in cooperation with the Global Health Security
        Agenda (GHSA).
    •   G7 should request developing countries and aid organizations that activities
        related to health system strengthening (such as community support, health
        care center and hospital support, and local government strengthening)
        include capacity development in preparing and responding to public health
        emergencies by for example referring to a mutually agreed upon contract.
        In addition, G7 should build a mechanism that monitors these activities
        through use of a framework, such as the UHC 2030 Alliance (the successor
        model of IHP+).

- G7 should actively support the reform of WHO following the recent Ebola outbreak in West Africa.[1] In particular, G7 should develop a mechanism that provides countries with strong incentives to report any potential public health emergency of international concern (PHEIC) within a specific timeframe. In addition, to make the reform process more efficient and effective, G7 should agree on concrete reform plans (such as the formulation of rapid response teams that are dispatched and deployed to local sites when public health emergencies occur, regular updates of the team member list, and development of detailed processes and plans for deployment and chain of command) and monitor and supervise such reform.

- In addition to supporting the WHO's capacity strengthening in emergency response, G7 should advocate for the establishment of a framework that coordinates activities between countries and aid organizations when an international response is required. In particular, G7 should encourage, through this framework, that the WHO's administrative functions, including responding to emergencies, are transferred to the UN at the discretion of the UN Secretary-General. The establishment of a new permanent organization, such as UNMEER in the case of Ebola, is not desirable.

- G7 should clarify that the U.S. Centers for Disease Control and Prevention, Institut Pasteur in France and other international NGOs could play important roles in responding to a pandemic event (e.g., surveillance, contact investigation, sample collection and laboratory diagnostics) and define the division of roles and responsibilities between them and UN systems.

- <Japan> After the G7, Japan should host a committee that aims to reconstruct the global health architecture and appoint a representative of Japan to serve as Secretariat to ensure Japan remains actively involved in the reconstruction process.

- <Japan> Japan should strengthen the cooperation and institutional capacities of the National Institute of Infectious Diseases (NIID) and National Center for Global Health and Medicine (NCGM), including human resource development programs (e.g., NIID's Field Epidemiology Training Program and NCGM's Infectious Disease Emergency Specialist Training Program), and make them hubs of international public health emergency response. In so doing, Japan should actively utilize the human resources of private sector and civil society organizations, such as the Asia Pacific Alliance for Disaster Management, in which Japan takes the leading role.

- <Japan> In order to lead global infectious disease control, Japan should create the "Center for Health Protection and Promotion" (tentative name), an agency capable of conducting investigations under Biosafety level (BSL) 4. This center will promote public health emergency responses through public-

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[1] Although WHO has played important technical and normative functions in the world, such as the implementation and development of regulations and guidelines, WHO can neither intervene beyond national sovereignty nor act beyond the health sector. Also, lack of coordination capability at the national and regional revels, bureaucratic sectionalism, and limited financing have been identified as WHO's major challenges. Since the Ebola crisis, there have been calls for drastic reform of WHO to address these challenges.[10]

private partnerships, share knowledge and lessons with the world, and contribute to the training of experts in developing countries.

- <Japan> In the case of emergency, Japan should actively be involved in decision making within the UN system and support effective coordination of international emergency response efforts (including human resource support) under the guiding principles of the Inter-Agency Standing Committee.[18]
- <Japan> To strengthen cooperation of medicines regulatory authorities, Japan should host a summit in which heads of the regulatory authorities from 21 countries participate and discuss an effective framework for international responses to public health emergencies.
- <Japan> Japan should develop an emergency response system built upon industry-government-academia collaboration, which focuses on Japan and neighboring Asian countries. In this system Narita, Kansai, and Naha International Airports work as hubs of international public health emergencies in conjunction with UN humanitarian assistance and emergency response systems. For example, Japan and other G7 countries define the division of roles in responding to pandemic-prone infectious diseases and ensure a stockpile of necessary drugs, equipment, and materials for humanitarian assistance and emergency response are maintained at these airports and surrounding ports.

B   Allocate more investment from aid organizations (e.g., Global Fund and GAVI Alliance) to health system strengthening

- G7 should suggest that major aid organizations and partnerships (Global Fund and GAVI Alliance, CFE[2]) shift their focus from investments in conventional disease-specific programs to investments in health system strengthening in preparing and responding to public health emergencies (such as surveillance and laboratory diagnostics) with use of domestic resources (human and material).
- <Japan> At the G7 Kobe Health Ministers' Meeting, Japan should lead the creation of action plans to support health system strengthening. From 2017, Japan and other interested countries should regularly host follow-up meetings, so that Japan can take the lead role in developing the rules of investment and technical assistance for health system strengthening toward UHC.

C   Secure emergency response resources through the efficient use of new funds (e.g., CFE[2] and PEF[3]), further investment of official development assistance (ODA) toward global functions (such as global public goods), exploration of new funding sources

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[2] Contingency Fund for Emergencies: fund for emergency response, established by WHO to enable quick response to emergencies and infectious diseases outbreaks, like the Ebola crisis.
[3] Pandemic Emergency Facility: innovative financing mechanism, established by World Bank to enable quick and effective funding in response to a pandemic, with the use of private insurance schemes. The G7 Leaders Declaration issued following the 2015 G7 Elmau Summit in Germany acknowledged and welcomed the need and consideration of PEF.

(e.g., international solidarity levy and private charitable funds), and strengthening of the supply chain system

- G7 should support major funds, such as CFE and PEF,[19,20] to improve coordination and to cut waste, inefficiency, and corruption. In addition, G7 should request the funds to conduct evaluations by independent investigation teams after every outbreak.
- G7 should advance the discussion with major global suppliers on rapid supply systems in case of emergency, like the Pandemic Virtual Supply Chain (a system proposed by World Food Programme, through which international communities can quickly procure necessary resources from suppliers that have been screened in advance to meet certain conditions). The discussions should include infrastructure development that enables quick distribution to all people in need, selection of suppliers, terms and conditions of transactions, etc.
- In order to construct resilient health systems at global levels, G7 countries should agree on their target amounts of donor ODA to be channeled to support global functions (such as the provision of global public goods). In the next fiscal year or later, G7 should aggregate the amount and report progress and achievements to the public.
- Regarding exploration of new funding sources (e.g., international solidarity levy and private charitable funds), G7 should establish a working group, comprised of experts from G7 countries, within the Leading Group on Innovative Financing for Development.
- <Japan> Japan should actively be involved in the coordination of the mechanism described above and send a representative of Japan to the Secretariat.

(2) Reinforce strong and sustainable health systems: focus support on policies that address diverse needs and increased health care costs in ageing societies

> Objectives
> ◆ Countries have access to a global knowledge-sharing platform that supports achievement of UHC
> ◆ Countries have adequate policies to address diverse needs and increased health care costs in ageing societies

[Examples of action plans]

A Establish a global platform to share countries' experiences, both positive and negative, with regard to health system sustainability in ageing societies

- To support national health care strategies designed to implement UHC, G7 should facilitate the sharing of experiences, both positive and negative, of OECD countries that have successfully implemented UHC as well as countries that are currently working to implement UHC. To support this objective, G7 should fully utilize existing partnerships, including the Social Health Protection Network (P4H) and the Alliance for Health Policy and Systems Research (HPSR).

- G7 should ensure that experience and knowledge that is shared is not limited to a narrow definition of the health sector, which includes health care and care giving, but, instead, includes all related sectors that directly influence health, such as nutrition and water and sewerage. G7 should further the concept of "health care as a social system," a concept identified in the MHLW's independent Advisory Panel's Health Care 2035 Report, within the context of SDGs.
- G7 should convene a high-level follow-up meeting on WHO Global Strategy and Action on ageing and health to monitor progress of action plans and expand political engagement. G7 should also work with the OECD to regularly summarize and publish the status of action plan implementation in each country.
- G7 should strengthen its support for innovative projects in developing countries through the private sector, such as telemedicine or micro health insurance[4]. For example, G7 should organize side events at high-level G7 meetings on health or TICAD and invite companies and NGOs engaged in these types of projects to facilitate dialogue and collaboration between donors, industry, and NGOs.
- <Japan> Japan should organize a committee of experts from international organizations and different countries to lead development and implementation of policy on 1) facilitating a healthy and viable ageing society, 2) securing and maintaining funding for health care, 3) structural reform to develop health care professionals, 4) patient-centered, community-based integrated medical and care giving services 5) improving quality of health care and care giving.
- <Japan> Upon creation of the above committee, WHO Kobe Centre, along with other international organizations, should support the above policy actions by providing a research platform from whence knowledge and experience related to ageing, including evaluations of national strategies to ensure sustainability of UHC amidst population ageing, can be shared.
- <Japan> Japan should collaborate with organizations including WHO Kobe Centre on research on ageing and innovation (e.g., disease prevention through use of big data, the design of social systems based on social determinants of health, and the relationship between population dynamics and financial resources and social security systems) so that Japan can share its insight while learning from the experiences of other countries.
- <Japan> JICA and World Bank should organize a regional workshop on UHC targeting policy makers from the health and finance authorities in developing countries.

B   Enhance sustainable mobilization of domestic resources within health systems by supporting, in particular, policy-making that incorporates collaboration and dialogue between healthcare professionals and financial authorities in developing countries.

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[4] Micro health insurance: health insurance offering low-cost, affordable coverage for low-income people in developing countries who have difficulty obtaining ordinary insurance.

- G7 should expand the annual Health Minister's meeting (including a joint session with Finance/Economics Ministers), in collaboration with international organizations. In particular, it should aim to expand regional networks in Asia, South America, and Africa, providing a platform to discuss challenges to sustainable UHC and promoting regional collaboration and mutual understanding.
- G7 should expand support for countries' medium-term expenditure framework (MTEF) and financing strategy for health through fiscal space analysis to help secure domestic budget for health systems strengthening in each country. It should also work with World Bank and WHO to monitor implementation and regularly publicize implementation status.
- <Japan> Japan should utilize TICAD processes to coordinate regular joint meetings between Ministries of Health and Finance in African countries on health financing. Specifically, Japan should organize a side event at TICAD VI this year to discuss reform of the existing regional training systems and develop plans to improve health financing.
- <Japan> In collaboration with the World Bank, the Asia Development Bank, WHO and OECD, Japan should strengthen training on health financing and health systems strengthening for policy makers at Ministries of Health and Finance in Asian and African countries.

(3) Establish a monitoring and accountability framework for UHC

> Objectives
> ◆ Countries establish country-specific UHC plans in collaboration with bilateral support mechanisms, including IHR and GHSA, based on the global UHC monitoring framework
> ◆ Organizational and professional capabilities to evaluate health systems, including health technology assessment (HTA), are strengthened

[Examples of action plans]

A Enable countries to design country-specific monitoring and accountability frameworks, rather than instituting frameworks driven by aid countries or aid organizations, through a collaborative process that includes the aid countries and aid organizations that provide bilateral aid for health system strengthening (e.g., support for strengthening IHR core capacities)
- As the pathway toward UHC is different for each country,[21,22] building on the global UHC monitoring framework, G7 should support countries to develop action plans toward UHC in line with the priorities and implementation capacities of each country, establish monitoring measures and indicators, and secure an accountability framework. For these purposes, G7 countries should actively utilize the new "Data Collaborative" framework, which was launched this March by WHO, World Bank, USAID, etc.[23] Furthermore, G7 should organize an informational forum bringing together IHR, GHSA, and HSS officials and representatives from G7 and developing

countries to discuss health system performance measurement and capacity building regarding data use for national and community health policies.

- In order to advocate for health crisis preparedness in countries, G7 should urge the WHO to collect, report and provide updates on each country's preparations for health crises based on IHR. Countries should then be encouraged to comply with preparedness plans. At the same time, G7 countries should encourage countries with insufficient implementation to take action at follow up events, such as TICAD.
- G7 should advocate for clearly defined data use and obligations of feedback to countries.
- G7 countries should support the strengthening of the secretariat function (staffing and budget) of the International Health Partnership plus (IHP+) and expand membership to enable the IHP+ secretariat to play a central role in political and technical coordination for UHC, IHR core functions and HSS. Furthermore, in collaboration with IHP+, supportive donor partners with specific time frames and targets should 1) establish a database and system that enables mapping and the efficient use of domestic and external resources, 2) implement joint financial management assessments, 3) develop joint annual health sector reviews (JAR) for national health strategic plans (NHSP), and 4) establish independent accountability review panels.
- <Japan> Japan should support system developments, capacity building for policy implementation, monitoring to secure accountability of national and local governments and health providers, and expansion of results-based financing (e.g., use of the yen loan mechanism and collaborations with organizations including World Bank). Furthermore, Japan should develop human resources in the area of global health policy research to contribute to these activities.
- <Japan> Japan should send a representative to serve in the IHP+ secretariat to lead mechanisms to strengthen donor coordination that further efforts to achieve UHC through IHP+.

B Strengthen professional and organizational capabilities to enable evaluation of health systems and various health system aspects, including health technologies (e.g., HTA)

- In collaboration with G7's HTA institutions (e.g., U.K.'s NICE), WHO, Cochrane Collaboration, Primary Health Care Performance Initiative (PHCPI) and the Gates Foundation, G7 with related agencies should establish a research group and develop training programs and training materials to support the introduction of quantitative analysis methodologies to recipient countries (e.g., meta-analysis, cost-effective analysis, and other techniques to analyse health service efficiency) to further efforts to monitor and evaluate HSS.
- G7 should provide technical assistance and capacity building training to the officers of HTA implementation agencies in recipient countries. For this purpose, G7 should organize conferences with G7's HTA institutions and develop an action plan.

- <Japan> Japan should establish a department of health technology and health outcomes research within the Ministry of Health, Labour and Welfare that becomes a centre for collaboration between domestic and international experts and international cooperation.
- <Japan> Japan should collect outcome data needed for HTA in particular disease areas that capitalize upon Japan's strengths.

(4) <u>Promote the development of diagnostics, drugs, and vaccines for disease areas where market mechanisms are insufficient (e.g., neglected tropical diseases (NTDs) and diseases threatened by antimicrobial resistance (AMR))</u>

> Objectives
> ◆ Priorities for development of drugs and vaccines that address NTDs and AMR are clarified and shared among major donors and research institutes
> ◆ Countries optimize regulatory guidelines for drugs and vaccines to address NTDs and AMR
> ◆ Countries have sufficient funding mechanisms to support development of priority drugs and vaccines (e.g., "push" (supporting R&D costs) and "pull" (creating market incentives) mechanisms)

[Examples of action plans]

A   Develop a mechanism that identifies high priority diseases and projects
- G7 should organize a working group in collaboration with research institutes in each country (e.g., U.S. National Institutes of Health (NIH) and Japan's Agency for Medical Research and Development (AMED)), WHO, World Bank and academia to identify high priority diseases and TPP (Target Product Profiles) based on DALYs[5] and effectiveness of available treatments and prevention methods.
- <Japan> Through the industry-academia-government collaboration described above, Japan should launch a series of meetings within the MHLW to discuss epidemiological data, to evaluate the effectiveness of existing treatments, and to identify target profiles, then lead the global discussion on disease prioritization.
- <Japan> In addition to HTA being implemented in developed countries, Japan should launch a working group within the MHLW to develop parameters that evaluate cost effectiveness of treating NTDs (e.g., DALY), and contribute to the global discussion on high priority diseases and projects.

B   Optimize the regulatory framework for drugs and vaccines that address NTDs and AMR, and promote international harmonization
- Using the existing regulatory harmonization platforms, G7 countries should lead the discussion on guidelines for the regulations on drugs and vaccines in

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[5] Disability-Adjusted Life Year: measure of overall disease burden, expressed as the number of years of healthy life lost due to ill health, disability or premature death. 1 DALY could represent 1 year of "healthy" life lost.

collaboration with regulatory authorities in developed and developing countries and the WHO Prequalification Programme.

- G7 should strengthen technical support for regulatory authorities in other countries (including personnel training on monitoring the use of antimicrobial agents use, approval review methods for drugs, etc.) and promote standardization and optimization of regulatory guidelines.
- <Japan> To encourage R&D of new antimicrobial agents, Japan should lead the global discussion on AMR by reviewing guidelines for clinical evaluation of antimicrobial agents and incentive mechanisms for its appropriate use. Additionally, Japan should consider applying the mechanism to facilitate development of orphan drugs to NTDs/AMR.

C   Strengthen mechanisms that incentivize development and secure funding for such mechanisms
- G7 should facilitate support for R&D for NTDs and AMR, especially for priority diseases, by developing various "push" mechanisms (direct support for development costs) and "pull" mechanisms (incentives for R&D, such as purchase guarantees and market creation). In particular, G7 should agree on the target to double public spending on R&D in the next five years, and summarize and release progress in each country.
- <Japan> AMED will increase their support for NTDs and AMR and strengthen its capacity to contribute to global health.
- <Japan> Japan should increase investment in the Global Health Innovative Technology (GHIT) Fund and support Japanese companies engaged in R&D for priority diseases and projects.
- <Japan> Japan should expand existing partnerships, including "The Access and Delivery Partnership: New Health Technologies for TB, Malaria and NTDs" implemented by Japan in collaboration with UNDP, WHO, and PATH. Japan should also support the development of new treatments indirectly by improving access to treatments and vaccines for NTDs and AMR and expanding markets in low- and middle- income countries.

5. Conclusion
The authors of this paper systematically analysed the challenges to global health architecture strengthening and propose action plans for G7 to address the four prioritized challenges. Global health architecture strengthening has risen rapidly to the top of the global agenda while the scope of health challenges in developing countries has broadened from infectious disease and child and maternal health to include ageing and non-communicable diseases. To better respond to these growing health challenges, the global community has adopted UHC as a new common goal.[24] Yet, the recent Ebola outbreak in West Africa revealed weaknesses in the global health system's ability to respond to public health emergencies and protect developing health care systems.[1,2,25] Therefore, strengthening of the global health architecture has been identified as essential not only to UHC, but also to the foundation of resilient health systems and the protection of human security. Japan's contributions to global health at the last two G8 Summits hosted by Japan define its legacy and exemplify its leadership potential in global health. In 2016, Japan will host the G7 Summit in Ise-Shima, where this legacy and leadership potential will be called

up to set the future global health agenda. In addition, Japan aims to use this opportunity to concurrently strengthen its functional capacity to more effectively and proactively contribute to global efforts. We hope that our proposal will help leaders of Japan and other G7 countries identify strategic directions for global health architecture strengthening to better respond to today's biggest health challenges.

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Table 1: Overview of challenges to strengthening global health architecture

Goals (What)	Action (How)		
	1 **Leadership and coordination**	2 **Accountability**	3 **Sustainable investment**
A **Strengthen preparedness for and response to threats to human security**	• Improve WHO's leadership in global coordination • Coordinate technical and financial support among agencies • Standardize emergency levels across agencies • Coordinate different sectors • Ensure that countries include emergency preparedness in their national health plans	• Strengthen global function of monitoring and evaluation (e.g., assessment of IHR and GHSA capacity) • Identify an international framework for outbreak response with progressive stages	• Advocate that donor countries increase funding for health, especially for global functions • Secure funding for emergencies, including preparedness and resilience
B **Strengthen UHC to achieve sustainable and robust health care systems**	• Address changes in disease structure from communicable to non-communicable diseases • Coordinate aid agencies and initiatives through IHP+ • Coordinate activities at global, regional and national levels • Establish knowledge sharing platform on ageing	• Establish country-specific monitoring process • Ensure accountability of non-governmental organizations • Enhance capacity for health technology assessment (HTA) to adequately evaluate health care strategies	• Utilize domestic resources in developing countries • Advocate that countries invest more domestic funding for UHC • Invest in health systems to address ageing populations
C **Promote innovation for global health and development of public goods**	• Prioritize development needs • Coordinate different funding mechanisms • Coordinate implementing agencies	• Ensure accountability of donors • Evaluate the performance of different R&D projects	• Strengthen incentive mechanism for global health R&D (e.g., doubling R&D investment)