

## PUBLIC HEALTH

The Committee would like to commend the Ministry of Health and Welfare (MOHW) for its impressive efforts with regard to childhood vaccination, cancer screening, control of chronic disease, health promotion, HIV/AIDS prevention and control, and many other important public health issues, as well as for maintaining an open dialogue with industry over the past year. Public health is one of the key contributors to societal stability and economic growth. Vaccination, for example, is one of the most powerful and cost-effective measures for fighting disease. Besides preventing illness and death – and saving the cost of care and treatment – it also brings the economic benefit of reducing the amount of lost work and lowered productivity. With the exception of clean drinking water, no other modality can rival vaccination in its ability to reduce mortality rates.

There is still room for Taiwan to further improve its preventive healthcare compared with other advanced countries. Statistics from 2013 show that OECD countries spent an average of 3% on prevention as a share of total health spending, compared with only around 0.6% in Taiwan. As for communicable disease prevention, Taiwan spent only 0.17% of health expenditure on vaccination, even less than Korea and Japan, which were both over 0.4%. In terms of immunization rates, child vaccination in OECD countries is 95%, whereas in Taiwan it is a slightly lower than 93%. The difference is bigger for influenza vaccinations for the elderly, where the OECD average is 49% and Taiwan's is around 40%.

This year the Committee provides the following suggestions for reference.

### **Suggestion 1: Put increased emphasis on preventive medicine, including increasing the budget for vaccination and stabilizing the National Vaccine Fund.**

Currently the National Vaccine Fund relies heavily for its financial resources on the health and welfare surcharge on tobacco products. As the amount of the surcharge that is allocated to the Vaccine Fund fluctuates year by year, the Fund's financial basis is not stable, often resulting in delayed implementation of vaccination plans. In 2015, the tobacco surcharge accounted for nearly 60% of the total NT\$1.9 billion in the Vaccine Fund, while government budgetary funding contributed less than 40%. This year the total Vaccine Fund budget is NT\$600 million less than last year, mainly because of a decrease in the tobacco surcharge allocation. The government was forced to postpone a new vaccine program.

As addressed in the MOHW's 2025 Health and Welfare White Paper and "National Vaccine Fund and Immunization Enhancement Plan," several vaccines recommended by the Advisory Committee on Immunization Practices (ACIP) are still waiting to be covered in the national immunization plan (NIP) because of budget constraints. These include pneumococcal vaccines for senior citizens, human papillomavirus (HPV) vaccines, rotavirus vaccines, and

shingles vaccines. If all of these were to be implemented, the necessary incremental budget would be NT\$1.4-1.5 billion – not a huge number compared with total National Health Insurance expenditures. Investing in vaccination is not only a matter of healthcare, but also increases the chances for economic growth. As the U.S. Centers for Disease Control and Prevention (CDC) has estimated, every dollar spent on childhood vaccinations brings ten dollars in savings in terms of medical and societal costs.

In this era of globalization and frequent international travel, there is a strong need to strengthen the protection to Taiwanese people through vaccination – and with the advancement of biotechnology, more and more vaccines will be developed and marketed. We therefore urge the Taiwan government to put increased emphasis on disease prevention and allocate sufficient government funding to provide NT\$2.5-3.5 billion annually to the National Vaccine Fund as envisioned in the MOHW 2025 *White Paper*, so as to assure steady future growth for a sustainable vaccine implementation plan. With the rapid aging of Taiwan society, it is especially vital to plan a vaccine strategy specifically for the elderly.

Before the government funding is fully allocated, we encourage the adoption of a phased implementation approach, as well as a flexible partial funding mechanism as previously discussed in ACIP so as to leverage private resources to improve the accessibility of vaccines and maximize the benefits they can bring to the Taiwanese public.

In the future, we urge the Taiwan government to build up a comprehensive plan to integrate preventative services and medical care, maximizing the efficacy of the overall system to provide holistic health care as an ultimate goal.

### **Suggestion 2: Increase evidence-based investment in cancer prevention and treatment to reduce the economic burden and loss of life.**

According to 2015 statistics released by MOHW, cancer topped the nation's 10 leading causes of death for the 33rd consecutive year. Cancer's economic impact is also greater than for any other cause of death. A report from the American Cancer Society published in 2010 estimated the economic impact of premature death and disability from cancer worldwide – not including direct medical cost – at US\$895 billion in 2008, a figure equal to 1.5% of the world's gross domestic product. In Taiwan, a paper published in 2015 in the *Taiwan Journal of Public Health* showed an estimated economic loss due to cancer of around NT\$21.8 billion in 2012, much higher than the NT\$12.3 billion caused by injuries. It was found that cancer reduces the length of a victim's life by an average of 27.5 years and working life by 7.3 years.

As addressed in the MOHW's 2025 Health and Welfare White Paper, MOHW has aligned with World Health Organization (WHO) policy objectives to reduce the cancer

mortality rate and premature death rate by 25% by 2020, and reduce the mortality rate of those in the 30-70 age bracket 25% by 2025. Until now, however, the cancer incidence and mortality rates have continued to increase, resulting in more loss of life and economic loss.

Given the widespread global trend for governments to increase investment in cancer prevention and treatment, Taiwan should reallocate its current medical resources to address this major public health issue and achieve the policy goal of significantly reducing the cancer mortality rate. More effort is needed on prevention strategies, including the elimination of carcinogenic factors, increased cancer screening. In addition, more investment and timely reimbursement in innovative cancer treatment for unmet medical needs are needed to achieve this policy goal.

We suggest that MOHW review the current National Health Insurance reimbursement allocation based on health-technology economic assessments, reallocating resources to cover new technologies and treatments that help patients regain a normal quality of life, resume normal work and social capabilities, and in general return to normal lives.

### **Suggestion 3: Actively implement a national program for the prevention and control of viral hepatitis.**

Currently 400 million people worldwide are living with either hepatitis B or hepatitis C, with no country left unaffected. The World Hepatitis Alliance and the WHO jointly organized the first-ever World Hepatitis Summit in Glasgow in September 2015 and released the Glasgow Declaration on Hepatitis, marking a pivotal step in the road to eliminate the world's seventh biggest killer. The Declaration calls upon all governments and stakeholders to cooperate in developing and implementing comprehensive, funded national programs. The strategy aims to achieve a 90% reduction in new cases of chronic hepatitis B and C, a 65% reduction in deaths from hepatitis B and C, and treatment of at least 80% of persons with chronic hepatitis B and C infections. The Declaration states a commitment to work toward the elimination of viral hepatitis as a public health concern by 2030.

Viral hepatitis and its aftereffects are important public health and healthcare issues in Taiwan. Taiwan has a very high prevalence of the hepatitis B and hepatitis C virus – 12% for HBV and 4.4% for HCV – and there are an estimated 3 million-plus HBV and HCV carriers.

Taiwan has made significant headway in fighting HBV and its related diseases. A milestone was the 1984 implementation of the world's first largescale hepatitis B vaccination program, which helped slash the carrier rate in children from 10.5% to 1.7%. In addition, by broadening access to effective HBV treatment, related chronic liver diseases including hepatocellular carcinoma (HCC) or liver

cancer have declined in the past few years. On the other hand, HCV control still faces challenges, including low diagnosis rates and low treatment rates due to lack of access to innovative treatments. Despite a government-sponsored screening program, only 30% of HCV patients are diagnosed and less than 10% have been treated in the past 10 years. The low diagnosis and treatment rates inevitably lead to higher risks of chronic liver disease and greater associated social and healthcare burdens.

Various researchers have confirmed that diseases related to chronic hepatitis B (CHB) and chronic hepatitis C (CHC) impose a substantial economic burden on patients, families, and society in Taiwan, including increasing healthcare costs related to disease progression, and work loss.

We urge the government to follow the WHO Framework for Global Action: prevent, treat, and save the lives of people infected with hepatitis through targeted regional and country-specific strategies. These strategies will help combat a disease that – despite affecting some 3 million people in Taiwan – remains largely unknown, undiagnosed, and untreated.

An effective policy framework can prevent new infections, improve surveillance and medical care, and increase disease awareness. In doing so, the Taiwan government can reduce the burden of infection at an individual, country, and regional level. These developments present a real opportunity to reduce the significant social and economic burden of global hepatitis B and C, and to take steps toward rendering the world hepatitis free.

### **Suggestion 4: Improve the clinical alert system for better patient protection.**

In the United States, over 200,000 adult in-hospital cardiac arrests (IHCA) occur yearly, with only 22-23% of such patients surviving to hospital discharge. Extrapolating based on the ratio of Taiwan's population to that of the United States and without factoring in the difference in medical advancement between the two countries, approximately 14,000 in-hospital patients in Taiwan can be expected to suffer cardiac arrest every year, and 10,780 of them will not survive the resuscitation efforts.

One study found that 59.4% of patients had at least one abnormal vital sign 1-4 hours before the arrest and 13.4% had at least one severely abnormal sign. The conclusion was that effective vital-sign monitoring is closely related to improving in-hospital mortality rates.

All in-patients should be monitored for vital signs. When the indicator is abnormal, the monitor sets off an alarm to alert hospital staff to take necessary action. But the alarms often merely create a cacophony of sounds. Statistically, some 88.8% of annotated arrhythmia alarms have been false positives. Excessive alarms can lead to alarm fatigue among hospital staff, desensitizing them to emergency situations that

threaten the life of the patient.

Because of the seriousness of this problem, the Joint Commission International (JCI), when auditing patient safety related indicators in hospitals, makes special requests for improvements in the clinical alert systems (CAS) to define the most important alarm signals and identify which alarm sounds correspond to real needs, not just creating noise and causing alarm fatigue.

To enhance the safety of hospital patients, we recommend that MOHW include CAS improvement in its hospital accreditation guidelines, referring to indicators used by the JCI for hospital accreditation. That step will help hospitals clearly define the important emergencies and signals that warrant the immediate attention of hospital staff to better protect patient safety.

**Suggestion 5: Expand the antimicrobial stewardship program to cut down the misuse of antibiotics.**

Even when given the best possible preventative care, livestock may become sick and require the use of antibiotics. But it is important to avoid overuse. As the U.S. Food and Drug Administration notes on its website: “We know that all uses of antimicrobials, whether in humans or animals, can spur resistance.” The Committee supports the efforts of the Council of Agriculture (COA) to control overuse. For example, since 2005 the COA has been removing growth-promotion claims from the labels of antibiotics that are deemed “medically important” – that is, important for human healthcare. We also support COA’s effort to track all the antibiotics being used in the livestock industry by asking local manufacturers to report the names of customers and the amounts sold. COA’s testing of maximum residue levels (MRLs) using the MOHW’s standards is also to be commended for its efficiency. Inevitably, however, there are further actions that could be taken to strengthen and deepen the existing programs so as to enhance antimicrobial stewardship in Taiwan.

- a. We encourage the COA and MOHW to openly publish the data that they are tracking on a monthly basis to identify the total amount of antibiotics being used in livestock production in Taiwan. Without accurate data on the overall usage and the different molecules being used, it is difficult to track the degree of progress in reducing the use of medically important antibiotics in livestock production.
- b. One of the best methods to reduce antibiotic use in livestock, while keeping antibiotics available for treatment in the animal-health industry, is to encourage the use of injectable antibiotics. Only sick animals need to be injected, whereas oral antibiotics are generally included in the feed or drinking water of all the livestock, which often results in either overdosing or underdosing. We urge the COA to promote the use of injectable antibiotics among

farmers so veterinarians and farmers have that option for treating certain diseases in animals while reducing the overall use of antibiotics.

- c. Certain anticoccidials and antimicrobials used in livestock production are not considered medically important for human health. We urge the COA and the MOHW to consider using a different methodology to regulate this class of anticoccidials and antimicrobials compared to those that are medically important to human health. We believe that medically important antibiotics for humans should be tested more frequently and more strictly, so as to prevent the over usage of these antimicrobials by livestock producers and thus truly protect them for human use.

At the same time, the COA and MOHW should reduce the complexity and frequency of tests for the antibiotics that are NOT considered medically important. Finally, the COA and MOHW should set MRL levels for ALL antimicrobials in this class for all species, and not simply use the classification “cannot be detected” in its regulations.