

# Empowering the Next Generation: Investment in Preventable Infant Deaths by a Healthy Start

Chinese Taipei | 27 March 2024

---

APEC Health Working Group

December 2024



**Asia-Pacific  
Economic Cooperation**





**Asia-Pacific  
Economic Cooperation**

# **Empowering the Next Generation: Investment in Preventable Infant Deaths by a Healthy Start**

**Chinese Taipei | 27 March 2024**

**APEC Health Working Group**

**December 2024**

APEC Project: HWG 06 2022A

Produced by

Health Promotion Administration  
Ministry of Health and Welfare  
Chinese Taipei

For  
Asia-Pacific Economic Cooperation Secretariat  
35 Heng Mui Keng Terrace  
Singapore 119616  
Tel: (65) 68919 600  
Fax: (65) 68919 690  
Email: [info@apec.org](mailto:info@apec.org)  
Website: [www.apec.org](http://www.apec.org)

© 2024 APEC Secretariat

APEC#224-HT-04.5

# Table of Contents

<b>1. Introduction .....</b>	<b>3</b>
<b>2. Key Presentations and Takeaways.....</b>	<b>5</b>
<b>3. Outputs.....</b>	<b>9</b>
<b>4. Conclusion and Lesson Learned .....</b>	<b>12</b>
<b>5. Key Findings and Recommendations .....</b>	<b>13</b>
<b>6. Appendix A. Group Photos and Snapshot for Participants in This APEC Conference.....</b>	<b>14</b>

## 1. Introduction

The United Nations has established specific targets within the Sustainable Development Goals (SDGs), namely 3.1 and 3.2, aimed at reducing neonatal mortality rates to levels below 12 per 1,000 live births and decreasing the under-five mortality rate (U5MR) to levels below 25 per 1,000 live births by the year 2030. According to the UNICEF global health statistics in 2018, the neonatal and infant mortality rates in APEC economies have shown a downward trend. However, there is a considerable discrepancy among economies, the infant mortality ranging from over 30‰ to below 2‰ and we believe there is still room for improvement.

Across all APEC economies, there has been a notable reduction in neonatal mortality and the U5MR since 1990, attributed to the swift advancement of sophisticated medical interventions in pediatrics and neonatology. Nonetheless, the pace of decline varies significantly among APEC economies. Hence, to sustain the momentum of decreasing neonatal mortality and U5MR, it is imperative to encourage all APEC economies to invest in and formulate effective strategies. This conference has provided a platform for APEC economies and all participants to exchange their insights and glean from successful strategies employed by public authorities, industry stakeholders, and academia. The primary focus has been on the care of children with severe disorders and preterm infants, with deliberations centered around investment strategies tailored to reducing preventable infant deaths across diverse economies.

It is our aspiration that through the conference, we may cultivate a commitment among APEC economies to allocate resources towards the prevention of maternal and infant mortality, thereby safeguarding our invaluable human capital.

The APEC conference on "Empowering the Next Generation: Investment in Preventable Infant Deaths by a Healthy Start" was organized by the Health Promotion Administration, Ministry of Health and Welfare, Chinese Taipei. This conference took place in Chinese Taipei on 27 March 2024 (GMT+8), primarily for physical attendance, supplemented by providing online participation opportunities for those unable to attend in person. The event engaged 18 experts and attracted more than 200 people from 11 APEC economies, including Canada; Chile; Japan; Malaysia; Mexico; the Philippines; Russia; Singapore; Chinese Taipei; Thailand; and the United States to participate.

### **Organizing the APEC Conference**

The conference consisted of 1 keynote speech, 2 plenary sessions, and a panel discussion. The topics are as follows,

- Keynote Speech: Solutions for Minimizing Preventable Infant Deaths: Quality Improvement for Perinatal Care
- Plenary 1. Care and Development of Children with Severe Disorders: Current Practices and Future Planning

- Plenary 2. Investment in Strategies for Reducing Preventable Infant Deaths: Improvement of Care and Follow-up for Preterm Infants
- Panel Discussion: Experience Sharing Among APEC Economies

## **2. Key Presentations and Takeaways**

### **Opening Remarks**

For the opening of this conference, Dr. Jui-Yuan Hsueh, the Minister of Ministry of Health and Welfare, Chinese Taipei, extended a warm welcome to all the participants, he pointed out that the global under-5 deaths has seen a significant decline from 12.8 million in 1990 to 5 million in 2021, marking a 59% decrease in mortality according to the (WHO). However, progress has slowed down since 2010, and there are concerns that some economies may not achieve the SDG target for under-5 mortality and neonatal mortality by 2030. Low birth weight and prematurity are major contributors to neonatal mortality; therefore, it's crucial to seek the effective solutions to prevent those problems from happening and to ensure the accessibility of quality healthcare.

Dr. Hsueh also indicated that Chinese Taipei has made substantial investments in children's healthcare, encompassing the entire life course from preconception to adolescence. To bolster the healthcare system, particularly in pediatrics and neonatology, Chinese Taipei launched the "Optimized Child Medical Care Program" since 2021 and expanded the scope in 2024.

### **Keynote Speech**

- Prof. Henry C. Lee from the University of California San Diego, the United States demonstrated the successful example-California Perinatal Quality Care Collaborative (CPQCC), CPQCC was founded in 1997 to address issues related to preterm and neonatal infants and advance equitable care. CPQCC is the first of its kind. Starting with 24 hospitals with NICU, the collaborative now consists of 138 member hospitals.
- The quality improvement projects that CPQCC implemented over the years include shortening the length of stay in NICU, antibiotic stewardship, nutrition intake, maternal substance exposure, as well as the latest NeoBrain project, which aims to reduce intraventricular hemorrhage in very preterm infants.
- The collaborative has successfully implemented numerous quality improvement projects, including antenatal steroid use and increased breast milk use. In these projects, member hospitals may take different approaches to achieve the goal, for example, to increase breast milk use, some hospitals introduced lactation experts and some encouraged to increase the skin-to-skin time, but regular meetings are always held to ensure data collecting and experience sharing.

### **Plenary 1: Care and Development of Children with Severe Disorders: Current Practices and Future Planning**

- Moving towards 2030, we need to find more empirical evidence and establish proper guidelines. While trying to obtain the outcome that we want, it is important to always verify the safety and feasibility of all measures to ensure they are truly helpful for the families, the communities, and the children.



- We are now equipped with technology that may help to predict and detect the evolution of a disease. Technologies like AI can help us predict which patient is more likely to have clinical deterioration and then, we can pre-train the bed-side practitioners to boost their knowledge and preparedness for the possible situation.
- A dynamic strategic approach to child health-driven pediatric critical care necessitates, primarily, comprehensive data. Through the accumulation of sufficient data, we can assemble a multidisciplinary team capable of addressing patients in critical conditions and facilitating the training of specialized professionals adept at managing patient transfer.
- In the future, optimized pediatric care should be a focus of hospital evaluations; reimbursement mechanisms should be more flexible to allow the forming of interdisciplinary teams dedicated to critical care; medical education should emphasize on fostering the ability to recognize the need of timely referral; and lastly, an integrated economy-wide policy is the key to all future development and improvement.
- The keys to ensure safe and successful transport of pediatric patients with critical conditions are as follows: (1) Healthcare networks; (2) Single point of contact; (3) “Mobilized PICU” with specialized staff and equipment; (4) quality and safety; (5) education and training.

### **Plenary 2: Investment in Strategies for Reducing Preventable Infant Deaths: Improvement of Care and Follow-up for Preterm Infants**

- The preterm birth rate and low birth weight rate varies among APEC economies, ranging from below 5% to over 13%. According to “Born too soon-Decade of action on preterm birth second edition” published by WHO in 2023, continuum of care and follow-up from adolescent, reproductive health, pregnancy, labour and birth, postnatal, maternal and newborn to childhood, in different settings (hospital and community) is crucial for the health of preterm infants.
- In terms of low-birth-weight infants, the maternal age (> 31 years old) may be considered a risk factor for low-birth-weight infants, but not for infants of 22 to 27 weeks of gestation. Multiple birth is also a major factor for the low birth weight of newborns.
- Changes in procedures also impacted the mortality rate. Examples of such changes include the introduction of the fetal laser photocoagulation (FLP) procedure for twin-to-twin transfusion syndrome and the adaptation of cesarian section for infants of 24 to 27 weeks of gestation (more recently it has expanded to infants of 22 to 23 weeks of gestation).
- Intrauterine transfer is a procedure to ensure preterm deliveries are made in a well-equipped hospital because in-born infants tend to have better neonatal outcomes than out-born infants. About 90% of all very low birth weight infants are in-born infants and 40 % of which have gone through intrauterine transfer.
- Other NICU treatments include using point-of-care ultrasound to determine the management plan for each newborn and using postnatal corticosteroids for certain high-risk infants. The NICU also provides nutrition support by managing the total fluid intake, giving standardized or customized PN (parenteral nutrition) to the infant, introducing Peripherally Inserted Central Catheter (PICC) line for prolonged IV administration, and starting early feeding. The NICU staff also provides

developmental care such as creating a good environment for the newborns, providing gentle nursing care, and organizing parent support groups.

- Recognizing the challenges faced by parents caring for these infants, Health Promotion Administration, Ministry of Health and Welfare, Chinese Taipei, initiated the "Home Care Program for Infants with Low (Including Very Low) Birth Weight" in 2022. By December 2023, 81 hospitals had joined. This program aims to extend professional care services from hospitals to homes to alleviate caregivers' stress and anxiety. It offers proactive, accessible, and diverse visit services, including home visits, video calls, phone consultations, and face-to-face interactions. The service continues until the child reaches the corrected age of 2. Through the efforts of participating hospitals, 97.8% of eligible very-low-birth-weight infants (2,044 out of 2,089) and 98.3% of eligible infants with special health conditions (739 out of 752) were enrolled. Both groups exhibit an exceptionally high enrollment rate of 97%. In total, over 900 home visits, 2,300 video calls, and 12,000 phone consultations have been provided.
- In the future, we shall continue to seek cooperation with the government and other agencies, expand services for preterm infants and medical facilities, and improve the quality of care by collecting and sharing data with relevant facilities.

#### **Panel Discussion: Successful Experience sharing among APEC Economies**

- Malaysia launched the National Child Health Framework to combat infant mortality rate and improve child development through advocacy, collaboration, health promotion and education, quality services, capacity building, health information system building, and research and development.
- The Philippines adopted the Every Newborn Action Plan (ENAP) and the Ending Preventable Maternal Mortality (EPMM) as to combat infant mortality rate and prevent maternal death. The MNCHN Strategy is implemented to ensure proper perinatal care. We have been shifting from programmatic to Lifestage Approach, which implements a more integrated approach in healthcare for people in different stage of life. In 2019, we started the universal healthcare program.
- Japan has maintained one of the lowest infant mortality rates globally for decades, possibly attributed to various factors including prioritizing prevention measures and enhancing neonatal care. Efforts include improving maternal conditions, refining NICU skills and analyzing comprehensive clinical data to address specific risk factors. Additionally, addressing socioeconomic issues and bolstering community-based support systems are crucial in ensuring continued success in infant healthcare. The U5MR in Japan is relatively high and the majority is caused by complex and congenital conditions. Therefore, pediatrician society is pushing for pediatricians to have to renew their licenses every 5 years to ensure their knowledge and skills are up-to-date.
- What Thailand lacks are the "ABCD." A is for awareness, B is for budget, C is for competency, and D is for data. A remedy for the scarcity of the above items is the strategy "Snake" that the government established, which stands for skill, network, attitude, knowledge, and empowerment.

- The infant mortality rate in the past decade (2012 to 2022) in Chinese Taipei has increased from 3.7 per 1000 livebirth to 4.4 per 1000 livebirth. Comparing to other OECD economies, there is still room for improvement. According to our studies, the average maternity age, the maternal education level, the percentage of pregnancy through assisted reproductive technology, and the percentage of multiple birth have increased a lot, all of which have contributed to the increase of preterm infants with very or extremely low birthweight, which are major risk factors for neonatal death. Although the survival rates of such infants are high, due to the increase of these high-risk infants in number, the overall mortality rate has gone up in the past decade.
- Neonatal mortality rate in Chinese Taipei is not so ideal in comparison to economies like Japan or other OECD economies. One of the reasons might be because of the definition we have for “neonatal” babies. A standard should be established so the numbers from different economies can be properly compared. Other issues we should look into include nutrition intake of the mothers, maternal age, maternal body weight, and prenatal and postpartum psychological evaluations, etc.

### **Closing Remarks**

For the closing of this conference, Dr. Jih-Haw Chou, the Deputy Minister of Ministry of Health and Welfare, Chinese Taipei, expressed gratitude to all the experts, scholars, leaders, and colleagues in the field of child healthcare as well as online participants for joining this conference.

Dr. Chou expressed the gratitude to the experts from Canada; Chile; Japan; Malaysia; Mexico; the Philippines; Russia; Thailand; the United States and all the audience. He also pointed out that their experience in diverse, innovative strategies in preventable infant deaths will undoubtedly strengthen all participants' knowledge and understanding of maternal and child healthcare.

He believed that by working on discussion, dialogue, and consensus building, all APEC economies will forge a path forward to achieve significant reductions in infant mortality. With the collective effort of health departments, academic institutions, and healthcare professionals across APEC economies, the APEC region will be an ideal environment for newborns to grow up.

### 3. Outputs

#### Website and Program Book

To provide participants with a reference for the presentations, we have compiled speakers' abstracts into a program book and slides on the website. Please check the following link for the electronic program books and slides: <https://www.2024apechpa.org/download>.

#### Participation

The conference has 422 registered guests. The actual attendance at the conference is 267, and the conference participation rate is 63.2%, please check Table 1 for the detailed background of participants. There are 11 APEC member economies attending this conference, including Canada; Chile; Japan; Malaysia; Mexico; the Philippines; Russia; Singapore; Chinese Taipei; Thailand; and the United States. In total, we have invited 18 APEC member economies representatives and experts to attend and share their experiences and have successfully conducted an expert networking for further cooperation in the future. For the gender ratio, among all participants, there are 21% male and 79% female, please check Table 2 for detailed information.

Table 1. Participants by background (Total Attendance: 267)

Background	Number	Percentage
Government Agencies	66	25%
Medical Institutions	139	52%
Academic Institutions (incl. schools)	38	14%
NGOs, NPOs	18	6%
Private Enterprises	3	1%
Others	3	1%

Table 2. APEC member economies attendance and gender statistics (Total attendance: 267)

Economy	Male	Female	Prefer not to answer	Total
<b>Total</b>	<b>55 (21%)</b>	<b>211(79%)</b>	<b>1(0%)</b>	<b>267</b>
<b>Participants</b>	<b>44 (18%)</b>	<b>204(82%)</b>	<b>1(0%)</b>	<b>249</b>
Chile	0	1	0	1
Malaysia	0	2	0	2
Mexico	0	1	0	1
Russia	0	1	0	1
Singapore	1	0	0	1
Chinese Taipei	42	199	1	242
Thailand	1	0	0	1
<b>Speakers/Experts</b>	<b>11(61%)</b>	<b>7(39%)</b>	<b>0(0%)</b>	<b>18</b>
Canada	1	0	0	1
Japan	1	0	0	1
Malaysia	0	1	0	1
The Philippines	0	1	0	1

<b>Economy</b>	<b>Male</b>	<b>Female</b>	<b>Prefer not to answer</b>	<b>Total</b>
Chinese Taipei	6	4	0	10
Thailand	1	1	0	2
United States	2	0	0	2

### Survey

To survey whether participants have gained their knowledge after the conference, we kindly asked participants to take the survey before and after attending. The pre-survey was combined in the registration form and the post-survey was collected after holding the conference. In total, we collected 442 pre-survey results; and the post-survey was delivered to 267 participants, with 160 returns collected, and the collection rate of the post-survey is 60%.

Table 3. Results of Questions in Pre- and Post-Surveys

(a) True-false and multiple-choice question results (correct rate)

<b>#</b>	<b>Question</b>	<b>Pre-Survey</b>	<b>Post-Survey</b>	<b>Increased</b>
1.	According to the report from the Organization for Economic Cooperation and Development (OECD), the infant mortality rate in the Asia-Pacific region has significantly decreased since the year 2000. Factors such as the health of the mother, quality of antenatal and childbirth care, preterm birth and birth weight, immediate newborn care and infant feeding practices are important determinants of infant mortality.	99%	99%	0%
2.	The government can effectively reduce infant mortality rates through strategies such as promoting early exclusive breastfeeding, preventing newborn infections, and implementing public health interventions (such as vaccination programs, providing clean water sources, etc.).	100%	100%	0%
3.	According to the United Nations Sustainable Development Goals. By 2030, economies are urged to: End preventable deaths of newborns and children under 5 years of age, with all economies aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births.	58%	64%	6%
4.	According to the WHO recommendations for care of the preterm or low-birth-weight infant published in 2022, the recommendation to “Home visits by trained health workers are recommended to support families to care for their preterm or low-birth-weight infant was classified as: a. strong recommendation, moderate-certainty evidence	72%	75%	3%

(b) Questionnaire results

Pre-survey

#	Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	You have gained a preliminary understanding and insight into how APEC members enhance knowledge and strategies for the prevention of infant mortality.	33%	34%	28%	4%	1%
2	You believe there should be an increased willingness among APEC members to invest in actions related to the prevention of infant mortality and children's health.	49%	46%	5%	0%	0%
3	You consider this conference to provide an opportunity for collaboration among professionals from various fields.	56%	42%	3%	0%	0%

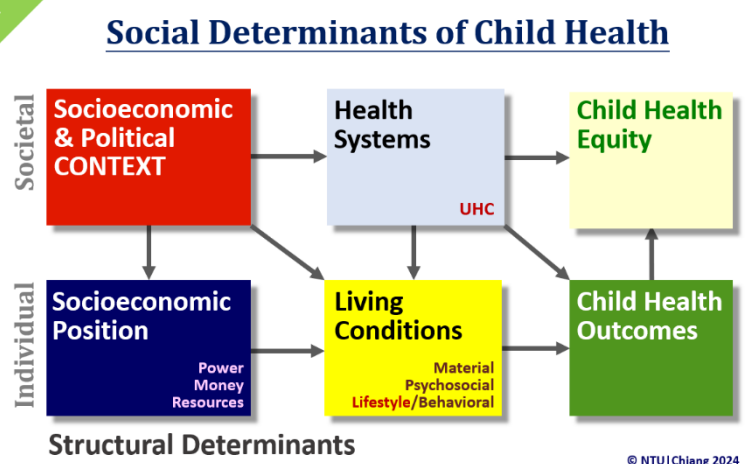
Post-survey

#	Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	You have gained a preliminary understanding and insight into how APEC members enhance knowledge and strategies for the prevention of infant mortality.	69%	28%	3%	0%	0%
2	You believe there should be an increased willingness among APEC members to invest in actions related to the prevention of infant mortality and children's health.	74%	24%	2%	0%	0%
3	You consider this conference to provide an opportunity for collaboration among professionals from various fields.	78%	21%	1%	0%	0%

#### 4. Conclusion and Lesson Learned

The conference aimed to encourage all APEC economies to keep investing and developing effective strategies for preventable infant deaths by exchanging experiences and successful practices among APEC economies. Through the conference, each economy’s representatives fully discussed and shared their experiences and perspectives. The conclusions are as follows,

- APEC economies required more empirical evidence and establishment of proper guidelines regarding child healthcare. Moreover, healthcare system required the integration of innovative technologies, such as AI or telemedicine that may make prediction and detection of the evolution of a disease more precise.
- In the future, optimized pediatric care should be a focus of hospital evaluations; reimbursement mechanisms should be more flexible to allow the forming of interdisciplinary teams dedicated to critical care; medical education should emphasize fostering the ability to recognize the need for timely referral; and lastly, an integrated economy-wide policy is the key to all future development and improvement.
- There are many factors contributed in the infant mortality rate, therefore, to keep reducing the rate, changes in procedures, treatments, and inborn/outborn status, etc., are playing important roles. Except for the medical institution’s effort, we shall continue to seek cooperation with the government and other agencies, expand services for preterm infants and medical facilities, and improve the quality of care by collecting and sharing data with relevant facilities in the future to reduce preventable infant deaths.
- To achieve better outcomes for child health, we should consider social determinants including health systems, living conditions, parents’ socioeconomic position, etc., but also do more to build capacity, research, and monitoring to guarantee child health equity.



## 5. Key Findings and Recommendations

- The progress for achieving SDG targets for under-5 mortality and neonatal mortality has slowed down since 2010, and there are concerns that while most economies have reached their targets before 2030, but there is still room for continued decline, and some economies are still struggling to reach those SDG targets. Furthermore, among all APEC economies, the situation regarding child healthcare system varies and the major cause of infant deaths are also different. Hence, there is no universally applicable strategy to effectively reduce infant mortality across all economies. Establishing a platform to exchange successful experiences from different economies is crucial.
- During the conference, economies shared and discussed successful practices and strategies to prevent infant deaths. Numerous strategies were presented through speeches and discussions. Representatives and experts from Chinese Taipei introduced the "Optimized Child Medical Care Program" launched by the Ministry of Health and Welfare of Chinese Taipei. Representatives from Japan showcased their efforts to enhance maternal conditions, refine NICU skills, and analyze comprehensive clinical data to address specific risk factors. Representatives from Thailand introduced the SNAKE framework, a holistic approach aimed at improving the skills, network, attitude, knowledge, and empowerment of healthcare providers to tackle these challenges. Representatives from Malaysia presented the National Child Health Framework designed to combat infant mortality rates and enhance child development. Additionally, representatives from the Philippines outlined their adoption of the Every Newborn Action Plan (ENAP) and the Ending Preventable Maternal Mortality (EPMM) to combat infant mortality rates and prevent maternal deaths.
- After attending the conference, participants expressed their wishes to have more related issues conferences to be held in the future for APEC economies and have more understanding of the current infant mortality status and future perspectives of strategies and goals for reducing infant deaths in different economies and suggest the organizer and APEC keep focusing on investing in child health.



## 6. Appendix A. Group Photos and Snapshot for Participants in This APEC Conference



Group photo- Dr. Jui-Yuan Hsueh, Minister of Ministry of Health and Welfare (first row, fifth from the left), and Dr. Chao-Chun Wu, Director-General of Health Promotion Administration (first row, fourth from the left) encourage APEC economies to keep investing in the preventable infant deaths to protect our human capital.



Dr. Jui-Yuan Hsueh, Minister of Ministry of Health and Welfare makes an opening remark to welcome APEC economies representatives, experts from public health.



Keynote speaker Prof. Henry C. Lee shares experiences for minimizing preventable infant deaths.



Plenary 1- Panel discussion



Plenary 2- Panel discussion



Panel Discussion- Experience Sharing among APEC Economies



Dr. Jih-Haw Chou, Deputy Minister of Ministry of Health and Welfare, makes closing remarks to thank speakers' contributions and all participants' attendance.