

Summit Summary

Overview of Summit on Child Health and the Environment 2014

CW CHAN, LHL WONG

Abstract

At the 20th Anniversary, the Hong Kong Paediatric Foundation and The Hong Kong Paediatric Society organised a "Summit on Child Health and the Environment" on 11-13 October 2014. This was the first environmental conference in Hong Kong focusing on "Healthy Environment for Healthy Children". We appreciate the support from the Food and Health Bureau and Environmental Bureau to the Summit. Over 50 international and local experts came together to share research evidence, to identify challenges and to define strategic action plans on children's environmental health. Keynote lectures highlighted children's unique vulnerabilities to environmental hazards, environmental health indicators and the roles of healthcare professionals in safeguarding a healthy environment. Birth Cohorts in Asia inspired future research and policy directions. Specific topics included environmental toxins and neurodevelopmental disorders, anti-smoking initiatives, food safety, health challenges related to air, water, light and noise pollutions and electronic media. Experts illustrated the importance of "Nurturing Environments" and issues on Children's rights.

Key words

Child health; Environmental hazards; Healthy environment

Introduction

Increasingly it has been recognised that many childhood diseases are caused by environmental hazards. Environmental Child Health is a new and expanding discipline which studies the profound impact of chemical and environmental hazards on child health. As healthcare professionals, we need to be aware of environmental causes of childhood morbidity and mortality and to equip ourselves for these new challenges in child health.

Hong Kong Paediatric Foundation (HKPF) wholly owned by The Hong Kong Paediatric Society (HKPS) is designated with the missions of public education and child advocacy in the community. At the time of the 20th anniversary of the Foundation, HKPF and HKPS supported by Hong Kong Paediatric Nurses Association (HKPNA) have jointly organised a multidisciplinary "Summit on Child Health and the Environment 2014" at the Hong Kong Academy of Medicine Jockey Club Building, Wong Chuk Hang, Aberdeen on 11-13 October 2014. It is for the first time in Hong Kong, that a conference on environmental health is specifically focused on children.

Hong Kong Paediatric Foundation

CW CHAN (陳作耘) FHKAM(Paed), FRCP(Lond), M.Med.Paed.
(Singapore)

LHL WONG (王曉莉) FHKAM(Paed), FHKCPaed, MPH(CUHK)

The Hong Kong Paediatric Society

LHL WONG (王曉莉) FHKAM(Paed), FHKCPaed, MPH(CUHK)

Correspondence to: Dr LHL WONG

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The Summit on Child Health and the Environment

The Summit on Child Health and the Environment was well attended by 457 delegates from a variety of disciplines including paediatricians, academics, scientists, nurses, allied health professionals, community partners, administrators,

and other stakeholders. Under the guidance of Professor Ruth ETZEL, Advisor of the Summit and the Chair of International Pediatric Association (IPA) Environmental Health Technical Advisory Group, we have brought together more than 50 international and local paediatric and environmental experts, public health advocates, policy-makers, youth representatives as well as other related professionals, to share scientific evidence on the impact of environmental factors on our children's health, the burden of diseases from environmental hazards, the strategies of action plans from international and local experience, and most importantly possible solutions and policies to reduce environmental hazards and to save the lives of the many susceptible children. A pre-summit Drawing Competition on "Healthy Environment, Healthy Children" was organised for kindergarten and primary school students to raise their awareness on this important child health issue. A total of 150 drawings were received representing the "environment concept" in the younger generation.

The Summit was fully supported by the Food and Health Bureau and Environment Bureau with the presence of the two Secretaries, Dr. KO Wing Man, Secretary for Food and Health and Mr. WONG Kam Sing, Secretary for the Environment at the Opening Ceremony as the officiating guests; the two Under-Secretaries, Prof. Sophia CHAN and Ms. Christine LOH participated as guest speakers, presented and partook in active discussions on government policies on and strategies of tobacco control and air quality improvements. Other policy-makers joined the Round-Table Discussion on the final day, including Dr. York CHOW, Chairperson of Equal Opportunities Committee ("EOC") and Prof. Daniel SHEK, the Chairman of the Family Council, the Government of HKSAR. The blessing and support from the two Bureaus highlighted the HKSAR government's devotion to improvement of child health and the environment.

Through the active participation of speakers and delegates, many aspects of the impact of the environmental on child health were explored in detail. The Summit comprised 3 Keynote Lectures, 4 Symposia on various environmental topics, 3 Seminars focusing on emerging conditions and policies on environmental health, 5 Lunch Symposia on common childhood diseases in relation to the environment and a Round Table Discussion as the final round up on priority action plan and recommendations. A Press Conference was held on 13 October 2014 to convey to the media the key messages delivered at the Summit. We believe protecting the health of children today will ensure the health of future adults.

Keynote Lectures Representing the Highlight of the Summit:

Keynote Lecture 1: Children's Unique Vulnerability to Environmental Hazards

Prof. Ruth A. ETZEL, U.S.A

In the first Keynote Lecture of the Summit, Prof. Ruth ETZEL emphasized that there was solid evidence showing that children are more susceptible to environmental hazards. Exposure during their developmental "windows of susceptibility" can trigger cellular changes leading to disease and disability across the life span. From the data published by WHO, 36% of all diseases among children aged 0 to 14 years can be attributed to harmful exposures in the environment while 60% of those deaths occur in children under 5 years old. Children are not little adults. They are more prone to environmental hazards because of (i) differing and unique exposures; (ii) dynamic developmental physiology with critical periods of development which are more vulnerable to environmental toxins; (iii) longer life expectancy with any resulting morbidity lasting for longer periods of time compared with adults and thus having a higher impact on the affected individual; (iv) lack of political power, with no direct voice to raise their needs.

Many children with illnesses caused by environmental hazards may not be recognised because of poor awareness by the general public and health professionals. The child that is being diagnosed may only represent the "tip of the iceberg". Taking appropriate action now will prevent further exposures of others. Policies on environmental health to protect children are therefore urgently needed.

Keynote Lecture 2: Environmental Health Indicators for Children

Prof. Zongyi DING, China

Prof. Zongyi DING shared with the audience in Keynote Lecture 2 that fifteen risk factors of adverse childhood health and injuries had been identified by a series of research studies in China. With further analysis and careful review, these factors including newly emerged infectious diseases; unhealthy life style; malnutrition; nutritional debt; problematic feeding habits; obesity; psychological hygiene and mental health challenges; issues on children's rights; gender inequality; childhood injuries; abuse and neglect; environmental hygiene and pollutions; and food safety were found to be closely related to the long-term health of children and could be used as environmental health indicators for children. This represents a new concept in the environmental health arena.

Keynote Lecture 3: Role of Healthcare Professionals in Safeguarding a Healthy Environment for Our Children

Dr. Chok Wan CHAN, Hong Kong

Dr. Chok Wan CHAN highlighted the role of healthcare professionals in safeguarding the environment for our children to grow and to develop. Children make up 18% of our population in Hong Kong, but represent 100% of our future.

The new driving forces and global environmental changes have created challenges to child survival and emerging child health issues in the 21st century. Public education and awareness on the importance of environmental health is a key initiative to engage the community to take action. Dr. Chan used Cuba as an example to demonstrate how important the government's effort in securing the health of children is. Professional solidarity from all sectors and a child-caring government are required to build a supporting environment for our children. Good health policy needs vision and mission in addition to financial resources. A joint voice for child health advocacy and a good child health policy in Hong Kong are urgently needed.

The Birth Cohort and Environmental Health in Asia – The Efforts of Asia Countries in Ensuring Safe Environment for Children to Grow and to Live

Regional experts were invited from Mainland of China, Japan, Chinese Taipei and Hong Kong to explicate their research findings on the associations between environmental factors and multiple childhood health outcomes. The Birth Cohorts have helped to identify the optimal environment to promote not only child health, but also adult health. The findings regarding locally relevant social determinants of health will be useful for influencing policy. The regional experts shared the results from their Cohort Studies providing excellent materials for further study.

The key messages addressed in the Birth Cohorts are summarised as below.

I. Introduction of Birth Cohort and the Birth Cohort Consortium of Asia (BiCCA)

Prof. Ruth A. ETZEL, U.S.A and Prof. Pau Chung CHEN, Chinese Taipei

1. There has been a significant increase in chronic diseases, birth defects and developmental problems over the past

2 decades. These have led to disabilities, sick days, loss of both short and long term productivity of the community.

2. Current best estimate from birth cohort studies show that 24% of all diseases and 35% of diseases in children can be prevented by modifying the environment.
3. Children account for 30% of our total population globally. Large scale cohort studies are useful in studying the role of the environment in the causation of emerging diseases, and to determine the relationship between exposure and outcome.
4. Co-ordinated birth cohort studies with standard definitions and core measures will enable data from different countries to be combined to form a much bigger data base for analysis, and results from individual countries can be compared.
5. The Environment and Child Health International Birth Cohort Group was formed in countries including Japan, China, France, USA and Germany. Studies have already started in 2011 for Shanghai, France, Japan and USA. Harmonisation of infant health outcomes, biomarkers, environmental measures and measures of socioeconomic and migration status have been initiated.
6. Birth Cohort Consortium of Asia (BiCCA) is the working group for the coordination of birth cohort in Asia with members including China, Japan, Korea, Malaysia, Nepal, Philippines, Singapore, Taiwan and Vietnam. With an enlarged set of data, extended diversity of participants and of environmental exposure levels, this regional cooperation will provides further insight into child environmental health, especially regarding the regional concern in Asia.

II. The Shanghai Birth Cohort

Prof. Jun Jim ZHANG, China

1. Environmental pollution is a prominent problem in China and includes air and water pollution, mercury emission, use of pesticides, plastic additives, formaldehyde in furniture, electronic waves etc. Exposure of fetuses to these pollutants in-utero and continuing exposure in childhood can lead to long term health consequences.
2. The Shanghai Birth Cohort (SBC) was designed to study the effect of genetic, environmental and behavioural factors on reproductive health, pregnancy outcome, growth and child health. The Cohort is currently in a pilot phase targeting at recruiting 4000 women who are Shanghai residents, married, and planning to conceive.
3. General investigations and questionnaires will be performed on all subjects and include socioeconomic,

nutritional, psychological, environmental factors for mothers during pregnancy, with a wide variety of information collected for children postpartum, 6, 12 and 24 months of age. In-depth investigations on the home environment and nutritional aspects will be conducted on 1000 subjects. The subjects are followed up from pre-conception to childhood.

III. Taiwan Birth Panel Study on Children's Environmental Health

Prof. Pau Chung CHEN, Chinese Taipei

1. Studies have shown that pollution and chemicals are associated with chronic illnesses like asthma, preterm delivery, neurodevelopmental disorders and obesity.
2. There were 2 large scale birth cohorts in Taiwan:
 - (1) Taiwan Birth Cohort Study (TBCS) Part 1 started in 2005, and Part 2 in 2011 investigating the effects of the environment through questionnaires and face-to-face interviews. 24,200 children were recruited, with 10% being interviewed in details.
 - (2) Taiwan Birth Panel Study (TBPS) in 2004-2005 recruiting 486 children for active follow up and 1040 children for passive follow up.
3. Main prenatal and postnatal factors investigated included infection, herbs, allergens, breastfeeding, and pollutants (e.g., tobacco, heavy metals, non-persistent pesticides, endocrine disrupting chemicals), stress, and genetics. Main outcome measures were growth, development, atopic diseases and neurocognitive and language development.

IV. Twelve Years of Progress in the Hokkaido Birth Cohort Study Environment and Children's Health: Focused on Dioxins and PFCs

Prof. Reiko KISHI, Japan

1. The Hokkaido Study on Environmental and Child Health was to study the effects of environmental factors on birth outcomes, childhood growth and neurodevelopment, childhood allergies; to identify genetic susceptibility to chemicals, and the interaction between genetics and the environment
2. The study consists of 2 birth cohorts – from Hokkaido (n=20,940) and Sapporo (n=514) and pollutants studied included polychlorinated biphenyls (PCBs), hydroxylated PCBs (OH-PCBs), dioxins and perfluorinated compounds (PFCs).
3. Results showed significant gender differences in susceptibility and outcomes in association with exposure to pollutants. Further investigations are needed to study

the mechanisms and effects of gender difference, epigenetics, effects of intrauterine exposure to pollutants and developmental factors.

V. Birth Cohort and Environmental Health in Hong Kong

Dr. C. Mary SCHOOLING, Hong Kong

1. The Hong Kong 1997 cohort is one of the largest Chinese birth cohorts in the world. It is a birth cohort studying children born in Hong Kong in April-May 1997.
2. The original aim was to study how environmental exposures and multiple environmental factors such as breastfeeding, second hand smoking, living environment, child care and lifestyle relate to growth and development in the first 1,000 days of life, the most vulnerable period for rapid developing brains.
3. The study was then expanded to examine minor genetic differences, such as G6PD deficiency or thalassemia minor as well as sub-group analysis looking into factors affecting the physical and mental health of adolescents. A bio-bank was set up for specimen storage.
4. Hong Kong has many unique social characteristics and the disease pattern of the population is also different from western countries. Results of the Cohort will be very valuable to direct future government policies in Hong Kong.

Seminars and Symposia in the Summit

In the Summit, other areas of children's environmental health covered included *neurodevelopmental disorders and environmental hazards; air pollution and respiratory diseases; health impact of second-hand and third-hand smoke to child health; food safety and child health; light, noise, water pollutions and electronic media to child health*. These topics were discussed in various seminars and symposia.

Seminar 1: Neurodevelopmental Disorders in Conjunction with Environmental Hazard

(1) Exposure to Environmental Pollutants during Pregnancy and Newborn Development in Shanghai

Prof. Jun Jim ZHANG

(2) Prenatal Environmental Exposure and Early Childhood Neurodevelopment

Prof. Pau Chung CHEN

(3) Effects of Heavy Metals Exposure on Neurodevelopment of Infants

Dr. Simon LAM

Key Messages:

- Millions of children have developmental problems caused by environmental hazards, and statistics showed a rising trend of birth defects occurring especially in developing countries in recent years.
- Fetuses and infants are particularly prone to external environmental hazards.
- The prenatal environmental exposures of heavy metals such as lead, methylmercury and other neurotoxins are recognised causes of neurodevelopmental disorders in children. Childhood lead exposure is estimated to contribute about 600,000 new cases of intellectual disabilities every year.
- Even low level toxin exposures have been shown to have both clinical and subclinical long-term effects on neurocognitive outcomes, including memory, attention, fine motor and intelligence.
- Measures to curtail these hazards in a safe way are of paramount importance.

Seminar 2: Environmental Health Advocacy**(1) WHO and Global Initiatives on Environmental Health Advocacy***Prof. Ruth A. ETZEL***(2) Children's Rights and Equal Opportunities***Dr. York Y.N. CHOW***(3) Environmental Protection and Public Health in Hong Kong***Ms. Christine K.W. LOH***Key Messages:**

- Environmental health concerns may be classified as non-urgent but important in the long run. Thirty-three percent of diseases can be prevented by modifying the environment.
- Existing resources designated to preventative measures for child health and environmental health are inadequate. More focus and resources should be devoted to this important category of health.
- Global plan of action for child health and the environment 2009 (WHO) aimed to improve surveillance, strengthen collaboration and contribute to attain the Millennium Development Goals.
- Children from different regions of the world are exposed to very different types and levels of environmental hazards. Group work and partnerships can help to alleviate the hazards regionally and globally.
- Issues that still need to be addressed include indoor air quality, tobacco exposure to children, endocrine

disrupting compounds and lead poisoning.

- Children should have the right to fully develop their abilities and potentials. They should live in an environment with no abuse, no harassment, no torture, no pain, no suffering, no neglect and no discrimination.
- Although the International Convention on the Rights of the Child was adopted in Hong Kong since 1994, there are still gaps and inadequacies that hinder developmental opportunities of certain at-risk groups such as children living in poverty, those with disabilities or special needs, those from ethnic minorities and lesbian, gay, bisexual, transgender and intersex (LGBTI) children.
- Further work needs to be done on home/education/social environment, parental information/education, care for at-risk children, review of school policies/systems, consolidate child protection law, and setting up a Children's Commission to consolidate resources and to be dedicated to the pursuit of child health.
- Environmental protection is a public health issue.
- Air pollution is an important health risk for our children, and is a relatively neglected area in terms of child advocacy work. Air pollution is a leading environmental cause of cancer (WHO data).
- Government data showed that air quality in Hong Kong is above the WHO AQG standard since Hong Kong has a high activity, high emissions neighbourhood such as the Pearl River Delta region. Therefore local measures as well as collaboration with the Mainland cities are needed to reduce air pollution.
- Worse exposures at road sides, so vehicular emissions need to be focused upon.
- Improving public communication and education is crucial to help people to reduce exposure to pollution and ensure long term health.
- Air Quality Health Index (AQHI) has been launched in December 2013 but requires more communication to the public and healthcare professionals to increase understanding.
- Scientists, health professionals, IT professionals, designers need to collaborate to effect change and reduce exposure. More information should be made available for healthcare professionals to enable clinical decision making.

Seminar 3: Environmental Health Initiatives**(1) Exposure to Air Pollution and the Impact to Health***Prof. Peter BRIMBLECOMBE***(2) Water Quality and Control of Water Pollution in Hong Kong***Prof. Kin Chung HO*

Key Messages:

- Regulation of air quality in Hong Kong had focused on emission control of transport vehicles and marine vessels, but there is now increasing attention on exposure, which can be highly variable depending on indoor, outdoor, transit and activity levels. We need to modify city design as well as activities pattern to reduce indoor and outdoor exposure to air pollutants.
- There is high demand for fresh water in Hong Kong (950 million cubic metres required per day), 35% for domestic use, 25% for commercial and industrial use, 23% for horticultural irrigation and 17% for firefighting and other social consumptions.
- Accelerating challenges with monitoring and maintaining of quality of imported water from Dongjiang (the East River, a tributary of the Pearl River in Guangdong), which contributes to 80% of portable water in Hong Kong.
- Specific contaminants in Dongjiang water include heavy metals, persistent organic pollutants, micro-organisms (*Vibrio*, *Giardia lamblia*, *Cryptosporidium* species), contamination of edible vegetables due to polluted river water for irrigation, heavy metal discharge into the rivers leading to contamination of locally caught fish.
- In order to maintain sustainable water supply and thwart threats of water pollution, cross-border collaboration should be strengthened and new water resources should be explored. In the long run, we need total water management to enhance water conservation (e.g., water reclamation and recycling) and water treatment (drinking water being 100% acceptable according to WHO standards).

Symposium 1: Tobacco and Impact of Second Hand Smoke on Child Health**(1) Children's Health: The Impact of Tobacco Smoking, Second and Third Hand Smoke***Prof. Judith MACKAY***(2) Tobacco Campaign in Hong Kong***Prof. Sophia S.C. CHAN***(3) Territory-wide Study on Smoking Exposure in Adolescents and Children***Dr. Daniel S.Y. HO***(4) Epigenetics and Health Risks with Tobacco Exposure***Dr. Brian H.Y. CHUNG***(5) Hong Kong Legislation on Tobacco Control***Dr. Patrick C.S. LO***Key Messages:**

- The serious negative impacts of second hand and third hand smoke on child health across different generations are well demonstrated in scientific studies.
- The HKSAR government has done a great job with enacting legislations on tobacco control indoors. However, children are still exposed to household second and third hand smoke that jeopardises their short term and long term health.
- Action plans should include:
 - 1) Protection of children from any form of tobacco exposure;
 - 2) Legislation to prohibit smoking in vehicles with children inside;
 - 3) Increasing tobacco tax to encourage smoking cessation in the population;
 - 4) Development of a curriculum for environmental health for undergraduate medical students and postgraduate healthcare professionals.

Symposium 2: Air Pollution and Respiratory Diseases**(1) Global Scene of Air Pollution***Prof. Ruth A. ETZEL***(2) Phthalate and Organophosphate Triesters in House Dust and their Associations with Asthma and Allergies***Dr. Reiko KISHI***(3) Air Pollution and Respiratory Health: Local Studies and Implications for Prevention***Prof. Tze Wai WONG***(4) Pneumococcal Disease and Prevention in Hong Kong***Prof. Margaret IP***(5) Epidemiology of Respiratory Diseases for Children in Hong Kong***Dr. So Lun LEE***Key Messages:**

- Local and regional studies resounded with the global concern of preventable deaths such as ischaemic heart diseases, stroke, chronic obstructive pulmonary diseases, respiratory tract infections and lung cancer in relation to air pollution, especially among low income groups.
- The adverse effects of air pollution on children include increased hospital AED visits, hospital admissions, infant mortality and probability of sudden infant death syndrome. Children are more affected by both outdoor and indoor air pollution because of their patterns of activities.
- Deterioration of indoor air quality may be associated with increase in allergic diseases.

- Poor air quality at road sides and schools and suboptimal playground designs and public transport exchange ventilation all contribute to the burden of air pollution to child health.
- In 2010, WHO estimated that 7 million deaths were related to air pollution (outdoor 3.7 million versus indoor 4.3 million).
- It is recommended that city design as well as activities patterns of children should be modified to reduce indoor and outdoor exposure to air pollutants.
- Pneumococcal disease and its prevention, changes in global burden of invasive pneumococcal disease before and after the introduction of pneumococcal conjugate vaccine were discussed.
- Epidemiology and pattern of childhood respiratory diseases in Hong Kong were reviewed.

Symposium 3: Food Safety and Healthy Eating

(1) Food Safety for Children in Hong Kong

Dr. Samuel T.K. YEUNG

(2) Food Safety, Food Authentication, and Children's Health

Prof. Hoi Shan KWAN

(3) Healthy Eating for Children in the 21st Century

Prof. Zongyi DING

(4) Promotion of Breastfeeding - Practical Measures and Environmental Hazards

Dr. Xihong LIU

Key Messages:

- Food-borne infection such as *Listeria*, *E. coli* O157:H7, parasites and Food-borne intoxication can cause diseases especially in susceptible groups like children and pregnancy women. Summer is the peak season for food poisoning.
- Health threats to children may arise from toxicants such as methylmercury exposure from fish consumption.
- Children are a uniquely vulnerable group with regard to food safety due to their physiological and behavioural differences from adults and relatively high dosage of exposure.
- There is good legal framework in Hong Kong to monitor food safety – Food Safety Ordinance. Around 65,000 food samples are screened per year under Food surveillance programme.
- However "Health Food" and "Health Supplement" are currently in the grey zone with no regulation or monitoring in this area in Hong Kong.
- The government, paediatricians and scientists should work together proactively to educate the public on

healthy and safe eating habits. Regulations on health food and health supplement are urgently needed.

Symposium 4: Environmental Pollutants and Child Health

(1) Sources, Fates, Effects and Health Risk Assessments of Major Food Contaminants (DDT, PBDE and Hg), With Emphasis on Pearl River Delta

Prof. Ming Hung WONG

(2) Health Effects of Electronic Media for Children in Hong Kong

Dr. Thomas W.H. CHUNG

(3) Urban Forms in Hong Kong and Their Acoustical Environment

Mr. Maurice YEUNG

(4) Public Concern for Excessive External Lighting

Dr. Albert W.L. CHAU

Key Messages:

- Environmental pollutants such as heavy metals and organic pollutants in food chain, noise and light pollutions as well as electronic media and internet addiction have affected children's health physically and psychologically.
- The negative impact of electronic media was clearly documented whereas more longitudinal studies are required to establish the effect of sound, light and some of the newer toxins in the food chain.
- A large survey (largest review of noise pollution in Hong Kong and Asia) of the impact of noise in Hong Kong indicates the need for better urban planning to minimise the noise pollution problem.
- The consensus to avoid light pollution in Hong Kong is to have better control of the commercial light switch on and switch off time.

Lunch Symposium V: The "Nurturing Environment" for Children

(1) Family Environment

Prof. Daniel T.L. SHEK

(2) The Family and the School

Prof. Cynthia LEUNG

(3) Healthy School Environment

Prof. Albert LEE

(4) Play & Play Environments –an Integral Part of Happy and Healthy Childhood

Ms. Kathy K.H. WONG

(5) Peer Environment from Youth Perspective

Kids Dream

Key Messages:

- "Environment" in the board sense should not be limited to the "Physical environment" such as living environment, air, noise, light and water. It should also include "Social environment", "Family environment", "School environment", "Peer environment", "Legal environment" and "Play environment".
- The family environment is an important developmental context for children and adolescents. There are several dyadic parent-child processes which shape child and adolescent developmental outcomes.
- Early childhood behavioural problems usually associate with family disharmony and poor parenting skills.
- School-parent partnership is most effective to enhance parent training. Existing programmes include Hands-on Parent Empowerment (HOPE) targeting at new immigrant families and Healthy Start Home Visit Program targeting at disadvantaged families.
- Healthy School Environment allows students to enjoy school-life and to have effective learning environment.
- Home, school and community collaborative programmes should include healthy eating promotion and prevention of obesity.
- Play is an essential component of child development and a children's right. Children should be encouraged to choose any form of play from their perspectives.
- Quality play environments must cater for children with different needs and culture. Play environment should not restrict to playground only but should include all open spaces including those in the hospitals and in the streets.
- Peer environment can lead to positive influence like encouragement and support but also may give rise to negative impacts on health and social domains.
- Bullying at school and Cyber-bullying especially among vulnerable groups like ethnic minor, new immigrants and new comers to a school are common challenges for young people nowadays.
- Best solution to handle those bullying is to equip the bullied victim with socialisation skills and to teach them how to stop the bullying effectively.
- Stress in over-competitive environment leading to mental health problems is another major concern for youngsters.
- Young people prefer parents to be supportive and listening to their needs and let them to build up resilience rather than overprotective.

Round-Table Discussion

At the end of the conference, stakeholders and regional experts gathered together at a Round Table to discuss and formulate strategic action plans to address the pressing environmental health issues, to identify all key partners, to assess resource implications, to consolidate outcome measures and to guide future research direction and government policy in order to achieve our goals of "Healthy environment for healthy children". It was concluded that in the planning of environmental health policies, age-specific needs of children have to be considered as children's biological and psychological needs differ at different developmental stages. The economic, political and cultural environments also have to be taken into account when prioritising the action plans.

Prof. Ruth ETZEL, with her global perspective on environmental health, commented that a number of experts dealing with different environmental issues are working separately. It would be more cost-effective to encourage collaborations among all the stakeholders including children, youth, families, healthcare professionals, community leaders involved with child health and the policy-makers so that they can work synergistically to ensure adequate expertise in each aspect.

Ms. Christine LOH, the Under-Secretary for the Environment, has repeatedly emphasized that "Environmental Health" is not just a scientific category but a genuine public health issue that will affect children's health as well as the health of all in the community. Enterprises, community organisations and environmental groups are good partners in promoting the concept of environmental health in the community. It is also very important to work with the government for future regulations and implementations of environmental health policies.

The Panelists suggested HKPS and HKPF to take a coordinated role for local and regional experts to communicate and collaborate for future research and strategic measures on environmental health. A webpage on Environmental Health has been set up at the HKPF website to share the Summit materials, information, research ideas, policies and practical measures. It is hoped that another meeting can be organised in 2-3 years to update the progress and development of environmental child health in the region.

Key Messages Arose from the Round-Table Discussion:

1. The broad definition of Environment should include not only physical environment but also social, mental, family, school, peer and economic environments.
2. Family is an essential factor for ensuring children's health both from perspectives of experts and youth. As adults, we should respect and listen to youth's voice and help them to fulfill their dreams.
3. Education and awareness of the public especially parents on environmental health should be enhanced.
4. Paediatricians should be more involved in the area of environmental health.
5. Research on environmental health should be encouraged in order to facilitate evidence-based implementation of policy and practice.
6. Collaboration among different healthcare professionals and stakeholders are the key factor to success.
7. Timing and opportunity is also crucial in engaging the policy-makers, the community and all the stakeholders on environmental health for children.
8. Government and policy-makers should be approached tactfully with realistic suggestions and achievable goals.
9. Legislation on various environmental health items should be done timely.
10. Child Health Policy and Children Commission are the two essential pillars in securing children's health.

Agreed Priorities to Address Imminent Environmental Issues in Hong Kong:

1. Air Quality
2. Food Safety
3. Breastfeeding Promotion
4. Anti-Smoking
5. Another Cohort Birth Study for Hong Kong
6. Education and Advocacy to the Public
7. Child Health Policy
8. Children's Commission

Press Conference

A Press Conference was held at the third day of the Summit on 13 October 2014. Prof. Ruth ETZEL, Dr. Chok Wan CHAN and Dr. Lilian WONG presented the key messages arrived at the Summit. A number of major local newspapers had attended the press conference and reported on the event on the next day.

Key Message from the Summit Presented at the Press Conference

1. The invisible impacts of environment are becoming more visible now.
2. Children are more vulnerable to environmental hazards.
3. The current environment in Hong Kong is unfavourable for our children's healthy growth and development.
4. It is time to take action before it is too late.
5. All stakeholders should work together to create a healthy environment for children and the community as a whole to live.

Impact of the Summit

1. It is the first time to gather trans-sectoral and multidisciplinary efforts locally to tackle the environmental problems.
2. It is the first time for experts to focus on environmental problems affecting child health.
3. Participating professionals agreed unanimously that environmental problem is a multi-facet problem with strong element of public health.
4. Concerted effort from all stakeholders is mandatory for building a healthy environment for our children to grow healthily.
5. Strategic action planning for short, intermediate and long term is important for successful implementation.
6. Clear deliverables should be defined as outcome measures.
7. It is high time to recognise and address environmental problems affecting child health in Hong Kong.
8. Collaboration between countries and special administrative regions within the Asia Pacific region is essential for effective control of the environment.
9. Conjoint effort by the Government, non-government organisations (NGOs) and professional bodies is important for carrying out epidemiological studies, research and health policies to improve the environment for our children.
10. A Child Health Policy and a Children's Commission will be significant milestones for building a "healthy environment for healthy children".

Conclusion

The promising response of the Summit gave us tremendous encouragement and enlightenment to continue

our mission in promoting child health and environmental health in Hong Kong and the Asia Pacific Region. The Summit has established a platform for those interested in and dedicated to environmental child health to come together for reflection and collaboration. This is only the beginning of a long journey to tackle environment health issues. We expect more and more collaborative work among different stakeholders in coming days. **Environmentally-related childhood diseases have high social and economic costs. Hong Kong, as a mature and progressive society, must not shirk its responsibility to deal with the emerging child health challenges in time.**

Children represent 18% of our population but 100% of our future. It is the prime duty of every adult and healthcare professional to ensure a healthy environment for our children to grow and to flourish. We need to act now to protect the health of children today and the adults in future before it is too late. Let's begin with working in solidarity on engaging and mobilising professional, social, ecological and government bodies to achieve our common goal of building a *"Healthy Environment for Healthy Children"*.

For more details of the Summit and individual topics, please visit our website at http://www.hkpf.org.hk/en/activities_20annv.php

Acknowledgement

The HKPF and HKPS would like to show our great appreciation to the two Bureaus, the international and local speakers, the volunteers and all the participants for their great support to the Summit.

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2. The members of the Scientific Committee including Dr. Genevieve FUNG, Dr. Po Wan KO, Dr. Simon LAM and Dr. Helen TINSLEY.