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**Name of the University, Hospital, Research Institute, Academy or Ministry**

University of Queensland

**Name of the Division, Department, Unit, Section or Area**

Children's Health and Environment Program, Child Health Research Centre (CHRC), Faculty of Medicine

**City** Brisbane **Reference Number** AUS-111

**Title** WHO Collaborating Centre for Children's Health and the Environment

**Report Year** 10-2016 to 10-2017

**1. Please briefly describe the progress made in the implementation of your agreed workplan as WHO collaborating centre during the past 12 months (or the reporting period listed above). Please report on how each workplan activity was implemented, if any outputs have been delivered, if any results have been achieved and if any difficulties have been encountered during this time. If an activity has previously been completed, has not started yet, or been placed on hold, please indicate this.**

**Activity 1**

Title: Capacity building for research on children's environmental health through collaborative projects in low-income or developing countries.

Description: A series of capacity-building collaborative research projects are currently underway or being planned. These projects will involve training researchers in low- and middle-income countries and include:

1. Training researchers in CEH
2. Training researchers in methodology for measuring lung function and in neurobehavioural assessments.
3. Training researchers in integrated environmental health risk assessments.

WHO Collaborating Centre staff designed the materials for and have run an intensive post-graduate course on Children's Environmental Health Course in November each year between 2013 and 2016. The course is run through the School of Population Health, UQ. The course is attended by approximately 30 students each year, from a wide variety of backgrounds.

CC staff are participating in a WHO project to review the effectiveness of, update and modernise the WHO training materials, including developing innovating online training materials.

- o A CC staff member attended a planning meeting in Sansepolcro in October 2016.

- o CC staff developed an online survey for trainers to review the effectiveness of the WHO CC training package.

- o Proposals have been discussed with WHO and the Network of WHOCCs and several opportunities to develop and host online courses are being pursued.

- o CC staff are in the process of updating WHO training materials, including the "Why children", Children are not little adults" and Mercury" training modules.

**Activity 2**

Title: Develop and co-ordinate the Network of Collaborating Centres for Children's Environmental Health.

Description: Peter and Leith Sly are involved in advising WHO on developing a network of Collaborating Centres in CEH and on how to get the most from this network, as was discussed in the working meeting held at WHO HQ in Geneva on 20/06/2012. Peter Sly organised and Co-chaired (with Dr Maria Neira, WHO) a steering committee meeting to be held in Geneva on 29/10/2012 to further this process. Leith Sly will investigate methods for increasing communication using modern electronic communications and face to face meetings.

The Network of WHO Collaborating Centres for Children's Environmental Health has been established and is currently co-chaired by Peter Sly and Bill Suk (NIEHS WHO CC for Environmental Health Sciences).

- A website of the Network of WHO Collaborating Centres for Children's Environmental Health has been established
- The network includes WHO CCs in the Western Pacific Region (Hokkaido University, Sapporo, Japan; National Institute of Environmental Research, Incheon, Republic of Korea; The University of Queensland, Brisbane, Australia); South East Asian Region (Chulabhorn Research Institute, Bangkok, Thailand); Europe (Utrecht University, Utrecht, Netherlands); and the Americas (National Institute of Environmental Health Sciences, North Carolina, U.S.A.; Icahn School of Medicine at Mt Sinai, New York, U.S.A.; University at Albany, Albany, U.S.A.; Autonomous University of San Luis Potosi, Mexico; Pontifical Universidad Catolica Rio Grande do Sul, Porto Alerge, Brazil; University of the Oriental Republic, Montevideo, Uruguay); and two NGOs in official relationships with WHO (International Network on Children's Health, Environment and Safety (INCHES); International Society of Doctors for the Environment (ISDE)).
- Bi-monthly teleconferences are held between the CCs.
- The CC has participated in meetings of the Network of Collaborating Centres for Children's Environmental Health, including in Bangkok, November 2016.
- The CC participated in the first meeting of Australian WHOCCs held in Melbourne, April 2017. Discussion included linking relevant CCs in Child Health to the Network of CCs in CEH.
- The CC contributed content to The Second Regional Forum of WHO Collaborating Centres in the Western Pacific, 28-29 November 2017, Manilla, Philippines.

### **Activity 3**

Title: Capacity building and setting a research agenda in the impacts of eWaste on Children's Environmental Health.

Description: This activity will be conducted as part of the priority activities of the Network of Collaborating Centres in Children's Environmental Health. Specific activities planned as part of this activity include describing the health impacts of children's exposure to eWaste, including in both informal and formal recycling setting, including:

- o Systematic review of the current evidence
- o Working meeting with experts and representatives of WHO, UNEP, ILO and other International agencies
- o State of the Art publication following the working meeting.
- o Developing a WHO Training module on the impacts of eWaste on CEH, including integrated environmental health risk assessment.
- o A session on eWaste at the Pacific Basin Consortium for Environment and Health conference to be held in September 2013
- o The 4th International Conference in CEH, with a focus on eWaste, to be held in Bangkok in 2014.

The WHO e-waste program was officially launched in a session at the International Conference of the Pacific Basin Consortium for Environment and Health in September 2013.

- A web page of the network is hosted on the CC website and regularly updated.
- Additional publications on e-waste and child health have been published with the WHO CEH CC Network, including: Heacock M, Bain Kelly C, Asante KA, Birnbaum LS, Lennart Bergman A, Bruné M, Buka I, et al. E-Waste and Harms to Vulnerable Populations: A Growing Global Problem. *Environmental Health Perspectives* 2016;124(5).
- A chapter on e-waste exposure was written by CC staff for inclusion in the WHO publication "Inheriting a sustainable world: Atlas on children's health and the environment", published in March 2017.
- A section on e-waste has been included in the WHO/UNEP Healthy Environments for Children Alliance (HECANET) newsletter. WHO CC staff drafted this newsletter monthly.
- A workshop on e-waste is being organised by CC staff to be held at the 2017 Pacific Basin Consortium for Environment and Health Conference in Delhi, India.

#### **Activity 4**

Title: Develop communication strategies to increase awareness about prevention of environmental exposures and environmentally-related diseases in children

Description: A number of communication strategies, involving use of websites, list serves, email alerts and other mechanisms will be investigated as effective methods for communicating with a wide group of recipient's from the general public, environmental health and science professionals, health professionals and other interested parties. Examples of work currently being undertaken or planned under this activity include:

- Healthy Environments for Children Alliance (HECA) newsletter;
- WHO leaflets written in plain language and aimed at parents on CEH issues;
- a newsletter specifically addressing eWaste.

We plan to expand these activities to include a regional focus in the Western Pacific and Asian regions, including specifically targeting issues of regional interest, eg the health effect of e-Waste, and highlight regional activities and achievements.

The Healthy Environments for Children Alliance (HECA) monthly newsletter was drafted by CC staff in 2016-2017. 12 newsletters were released during the period.

The development of a WHO Package of CEH materials was co-lead by CC staff between January 2015 and March 2017. The package includes "Inheriting a sustainable world: Atlas on children's health and the environment", which is written in language suitable for the public and policy makers; a summary of WHO calculations of the environmental contribution to global burden of disease, "Don't pollute my future! The impact of the environment on children's health"; and infographics in the six UN languages.

#### **Activity 5**

Title: Develop and deliver high quality education on Children's Environmental Health

Description: The initial WHO training modules of CEH are outdated and need to be updated. We will systematically review and update these modules where required. In addition, we will produce educational materials aimed directly at children and collate teaching materials for use in elementary and high schools.

The training modules "Children are not little adults", "Why Children" and "Mercury exposure" are being updated by CC staff. The "Mercury exposure" module is being reviewed by WHO experts.

As described in the response to Activity 1, CC staff are participating in the WHO project to review the effectiveness of, update and modernise the WHO training materials. CC staff participated in a project planning meeting in October 2016, developed an online survey to review the effectiveness of existing training materials, conducted an investigation of delivering educational materials online via MOOCs, and are working with WHO and the network of CCs and partners to develop online training projects.

#### **Activity 6**

Title: Organize and participate in WHO training workshops in CEH

Description: Training workshops will be conducted in conjunction with WHO for health care professionals, environmental health officers and other relevant parties. These will be held in conjunction with appropriate national and international conferences in Australia, within the Western Pacific and Asian region and in developing countries elsewhere.

The output from this activity is described under Activity 1.

**2. Please briefly describe your collaboration with WHO in regards to the activities of the WHO collaborating centre during the past 12 months (e.g. means of communication, frequency of contact, visits to or from WHO). Please feel free to mention any difficulties encountered (if any) and to provide suggestions for increased or improved communication (if applicable).**

- Peter Sly provides regular technical and strategic advice to Marie Noel Brune Drisse via teleconferences held approximately once a month. Fiona Goldizen holds teleconferences with Marie Noel Brune Drisse approximately every 2-4 weeks.
- Fiona Goldizen attended a planning meeting for the WHO CEH training project in Sansepolcro in October 2016.
- Peter Sly participated in a meeting of Australia-based WHO Collaborating Centres, at the World Congress on Public Health in April 2017. A report of the meeting summarising key achievements of Australian WHO Collaborating Centres, particularly against SDG 3, will be presented to the Australian Government Minister for Health.
- CHEP developed an internship program in CEH in Brisbane in 2016. Three interns have assisted with WHO CC projects in 2016 and 2017. An intern from the CC spent three months working with Marie Noel Brune Drisse in the WHO Department of Public Health, Environmental and Social Determinants of Health in Geneva from January to April 2017.

**3. Please briefly describe any interactions or collaborations with other WHO collaborating centres in the context of the implementation of the above activities (if any). If you are part of a network of WHO collaborating centres, please also mention the name of the network, and describe any involvement in the network during the last 12 months.**

The main collaborations with other WHO CCs have been via the Network of WHO Collaborating Centres for Children's Environmental Health. This network is jointly led by Peter Sly and Bill Suk.

In addition to Network activities described above publications involving WHO CC collaborations in 2016-2017 include:

- Heacock M, Bain Kelly C, Asante KA, Birnbaum LS, Lennart Bergman A, Bruné M, Buka I, et al. E-Waste and Harms to Vulnerable Populations: A Growing Global Problem. *Environmental Health Perspectives* 2016;124(5).
- William A Suk, Peter D Sly. Ensuring a Bright Future for Children's Environmental Health. *Annals of Global Health* 2016;82(1):1-2.
- Sly PD, Carpenter DO, van den Berg M, Stein RT, Landrigan PJ, Brune-Drisse M-N, Suk WA. Health consequences of environmental exposures: Causal thinking in global epidemiology. *Annals of Global Health* 2016;82(1):3-9.
- Landrigan PJ, Sly JL, Ruchirawat M, Silva ER, Huo X, Diaz-Barriga F, Zar HJ, King M, Ha E-H, Asante KA, Ahanchian H, Sly PD. Health Consequences of Environmental Exposures: Changing global patterns of exposure and disease. *Annals of Global Health* 2016;82(1):10-19.
- Suk WA, Ruchirawat M, Stein RT, Diaz-Barriga F, Carpenter DO, Neira M, Sly PD. Health Consequences of Environmental Exposures in Early Life: Coping with a Changing World in the Post-MDG Era. *Annals of Global Health* 2016;82(1):20-27.
- Cao J, Xu X, Hylkema MN, Zeng EY, Sly PD, Suk WA, Bergman A, Huo X. Early-life exposure to widespread environmental toxicants and health risk: a focus on the immune and respiratory systems. *Annals of Global Health* 2016;82(1):119-131.
- Sly JL, Moore SE, Gore F, Brune-Drisse M-N, Neira M, Jagals P, Sly PD. Children's Environmental Health Indicators in Australia. *Annals of Global Health* 2016;82(1):156-168.



**4. Please briefly describe any type of technical, programmatic, advisory or other support received from WHO during the past 12 months for the implementation of the agreed activities listed above (if any).**

WHO staff have provided technical and advisory support on joint publications and projects. Regular teleconferences were held between Maire-Noel Brune Drisse and CC staff. WHO experts were contacted for relevant projects.