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# The International Conference on Applied Science and Health (ICASH): Promoting future health: Excellence, relevance and cost benefit

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The International Conference on Applied Science and Health (ICASH) celebrated advances in applied science and health research intended to benefit all sections of society, from the very young to the very old. The nature and strength of research inquiry is that each of us brings our own expertise, interests and experiences to the research we do, and this was illustrated by the many topics and many approaches represented.

Excellence is central to successful funding of research endeavour, as the immediate relevance and social importance of what we propose for the society in which we live. One key element often overlooked in the promotion of future health globally is a clear understanding of how the cost will be balanced by the benefits anticipated to come as a result of what we propose.

At the 2nd session of ICASH, in addition to a keynote speech by Professor Sangkot Marzuki on developing excellence and leadership in science and technology at a national level, we heard three focus talks on relevant and important contemporary themes:

- Why our children and what they learn at school are important for their future health by Professor Andrew J. Macnab.
- The central importance of water in all our lives, the impact of pharmaceutical and personal care products and risks of the current levels of contamination of this vital resource by Professor Rajna Jindal, and
- Approach of health benefit assessment due to air pollution in Thailand, by Dr. Thao Pham.

Then, participants from across Indonesia, Thailand, and Myanmar presented their papers on health issues of interest and relevance to them that highlighted the diversity and value of research being done by young investigators in the region. The sessions began with two 'Best Practices' presentations on the role of youth champions in school-based health promotion by Ronald Mukisa and the integrated action plan to eradicate malaria in Thailand by Chantana Sowat. The presentations spoke to the theme "Research for Better Society: Developing Science and Technology to Improve Health and Well-being" and underlined the importance of Health Promotion and Prevention Strategies, Public Health and Clinical aspect in Nursing, Maternal and Child Health, Applied Science in Education and Health, and Public Health Nutrition. Detail on all the presenter's work is available in the published proceedings available at http://publications.inschool.id/index.php/icash/issue/view/3.

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This second edition of the journal includes 2 works from the selected papers from the first conference and 2 new submissions to the journal.

The early initiation of breast feeding is recognized to benefit infants and their mothers. Bernolian and Sjaaf report on their evaluation of the opportunities and challenges encountered in running an early initiation program in an Indonesian hospital. While practitioners reported having strong initiatives to implement breast feeding, their challenges included limited support from managerial staff and a lack of knowledge of the benefits of early initiation among mothers. As "knowledge is power" it is to be hoped the information gained in this evaluation can lead to improvement in the initiation of this important element of infant care.

Promoting child health at school has many facets. Importantly, initiatives implemented must be evaluated for continuing benefit and relevance. The paper by Mukisa et al. revisits an innovative teacher driven school-based program implemented to provide rapid diagnosis and prompt treatment for malaria for children taken ill in rural schools in Uganda. Follow up a year after the program evaluation was officially completed shows teachers continuing to provide screening care and treatment and that the whole-school focus on malaria has been sustained. Children reported better health, more consistent attendance and improved academic achievement. Pupils have maintained their knowledge about malaria and become proactive in prevention strategies; 6% fewer tested positive for malaria; and key health knowledge was being passed to new pupils. Teacher administered diagnosis and care has reduced child morbidity from malaria significantly; essential knowledge generated has been sustained, led to new health practices and changed behaviors. Clearly this WHO health promoting school model is effective, sustainable and hence applicable to other countries where malaria is endemic and morbidity high.

Basic science techniques are of potential benefit to all age groups. Sawasdee et al. describe factors that determine the development of size-tunable polymeric nanoparticles which offer a unique delivery systems for drug delivery applications. Poly lactide-co-glycolide nanoparticles have been widely used for drug delivery because of their biocompatibility, biodegradability, ability to deliver hydrophobic drugs and as they improve drug absorption to targeted cells with both oral and parenteral administration. The authors describe how these nanoparticles can be synthesized and how their formation during synthesis can affect their size, which is an important factor relevant to the successful development of a drug delivery system.

The views and attitudes of minorities are important if equity is to be achieved in health care delivery. Hoang and Pham evaluated the extent and impact of misconceptions about HIV/AIDS among minority groups in Vietnam. They found negative attitudes and misperceptions, and that these likely originate from media channels which are heavily relied on by this group as an HIV information resource. In contrast, HIV information provided by health officers, who are themselves members of the same ethnic minorities was more accurate and more effective in improving attitudes in the community. Based on these data, the authors understandably recommend improving the quality of HIV messages delivered by the media by including the provision of public health information as a role for the health officers.

We have more presentations to look forward to at ICASH 3 in July 2018. In the meantime anything we can do as individuals or members of the institutions where we work to promote health and improve the wellbeing of those of all ages in the societies in which we live will be important. In this context it is important to remember that a strong economic argument is often the best way to translate the research we do into a practical reality. Finding a way to evaluate the cost benefit of any intervention we propose is an important element in how we justify and present our argument. Improving health care is not a strong enough argument in its own right these days, as the limited nature of health-care resources mandates that resource-allocation decisions are guided by considerations of cost in relation to the expected benefit of any technology or intervention. Yet many of us do not have the expertise necessary to calculate the economic impact of what we propose, so to do this interdisciplinary collaboration is often helpful. The principles of cost-effectiveness analysis are that the ratio of net health-care costs to net health benefits provides an index by which priorities may be set. The impact on quality-of-life

(both positive and negative) should be incorporated in the calculation of health benefits anticipated, as well as expected effects on life expectancy. These calculations can only be estimated but such analysis can increase the level of confidence in those making decisions about funding research, care programs or health promotion interventions, so we should include them, and make sure they are presented in ways that meet the needs of the various health-care decision makers we engage.

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