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Women's health across the life course

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Women's health is a cornerstone of population well-being, influencing not only individual outcomes but also shaping families, communities, and future generations. Despite growing epidemiological research, significant gaps remain in addressing health challenges across the life course. This session examines women's health through an integrated lens, focusing on cancers such as breast, cervical, and endometrial, which are deeply connected to modifiable lifestyle factors including obesity, glycemic control, and alcohol consumption. These conditions intersect with broader trends—depression, diabetes, and obesity—that have surged globally over the past decade, even after accounting for aging populations.

The discussion will highlight how biological, behavioral, and social determinants converge to create complex risk profiles for women at different life stages. We will explore barriers to care-seeking for menstrual and menopausal symptoms, challenges in balancing reproductive health with career development, and the lived experiences of patients navigating cancer diagnosis and survivorship. By incorporating perspectives from research, policy, workplace practice, and patient advocacy, this session aims to identify actionable strategies for prevention, early detection, and equitable access to care.

Ultimately, advancing women's health requires a life-course approach that integrates epidemiological evidence with culturally sensitive interventions and patient-centered research. This panel seeks to foster dialogue on overcoming structural and behavioral barriers, leveraging opportunities for innovation, and strengthening collaboration between researchers, practitioners, and communities to improve health outcomes for women worldwide.

Biography

Dr. Sarah Abe, Manager for Healthcare Services, Economic Research Institute for ASEAN and East Asia (ERIA), ID

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Evaluating fairness and mitigating bias in deployed AI systems in healthcare

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AI methods are increasingly being used in decision support and screening. Benefits of AI models include rapid development and the potential to augment models with new data. However, unstable responses necessitate ongoing audits of the performance and fairness of deployed systems.

A range of fairness measures are used for predictive models but there is limited guidance on how to choose an appropriate measure per task. A new taxonomy of fairness measures mapped to applications could be used as practical guidance.

With the growing use of AI models in decision support and screening, there is an opportunity to establish a new framework that goes beyond individual fairness audits and integrates continuous fairness monitoring with tools to update AI models with new data.

- One such proposal is to consider "*fairness triggers*"—when an AI model is found to produce biased results (such as a higher rate of false negatives when screening for a disease), the framework triggers an update to the AI model.
- Options on updating AI models might include simply augmenting the model with all available new data, retraining the AI model by oversampling from sub-populations where bias was detected, or more sophisticated fine-tuning to produce models that are specific to a sub-population, creating a "*tree structure*" of deployed models.
- Where a large AI model is being deployed across organisations where data cannot be shared and subpopulation-specific AI models are not feasible due to the small number of examples, federated learning methods could be used to update "*cross-organisational sub-population AI models*" following a fairness trigger for intersectional sub-populations across ethnicity, age, or other sensitive attributes.

Nearly all new AI guidelines and regulations recognise the need for ongoing audits. The proposed framework using fairness triggers and model updates could encompass and extend beyond guidelines and regulations to directly address equity in deployed AI systems.

Biography

Adam Dunn (PhD, 2007) is Professor of Biomedical Informatics in the Faculty of Medicine and Health at the University of Sydney. He has nearly two decades of academic experience in medical informatics and digital health. His main research interest is in applications of artificial intelligence (AI) in health. This includes clinical applications of AI using data from text and other data in medical records, public health applications of AI using data from the community and the online information they engage with, and clinical research applications of AI using data from and about clinical trials.