



Published by  
Department of Public Health and Preventive  
Medicine, Faculty of Medicine,  
Udayana University

## Extending intervention window from 1000 to 8000 first day of life: how can it boost the stunting reduction program?

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Stunting is one of the triple malnutrition burdens in Indonesia, beside obesity and micronutrient deficiency. Stunting is a reflection of long-term undernourishment which resulted in stunted growth. National Health Survey Data showed the reduction of stunting rate among under-five children in Indonesia from 37.2% in 2013<sup>1</sup> to 30.4% in 2018<sup>2</sup> and 21.5% in 2023<sup>3</sup>. Despite this decreasing trend, the national stunting rate was still above the World Health Organization threshold of 20%.<sup>3</sup> There is also a wide discrepancy between provinces in Indonesia with stunting rate ranges from 7.2% in Bali to 39.2% in Papua.<sup>3</sup>

Back in 2011, there was a movement by 28 countries including Indonesia regarding the 1000 first day of life (1000-days) program. This was an approach targeting children during their 1000 first day of life through specific and sensitive nutritional interventions. The 1000-days is started during pregnancy until the child is two years old. This movement involved related stakeholders from national and sub-national level including ministries, community organization, private sectors, professional organization, academics and others.<sup>4</sup>

Looking at the speed of stunting reduction across Indonesia, the 1000-days approach has yet given optimal outcomes. This program was focused only on the two years old milestone; while the older milestones are not adequately addressed. Bundy et al. suggested the 7000 days after the 1000-days starting from 3 years to 19 years old is another essential period for the stunting problem.<sup>5,6</sup> The older milestones have its characteristics in relation to growth, body changes and risk of nutritional problems. The 5-9 years phase is crucial since this age group is prone to infection and malnutrition which can hamper growth, while the 10-14 years is the stage when growth spurt and physiological changes happen due to puberty. The 15-19 years age group is the time for adolescent growth and consolidation which include maturity of brain development and also stage to engage in experimenting behavior which can influence lifetime behavior.<sup>7</sup>

The 8000 first days of life (8000-days) window has been accommodated in the public health program in Indonesia. There are programs toward school age children and adolescent, however, more comprehensive coverage on the health and nutritional issues should be addressed. Current program is integrated within the

school-based program including School Health Unit (UKS), adolescent health counsellor program (PKPR), nutrition action (*Aksi Bergizi*), school-based food program (PMT-AS) which are yet as intensive as the 1000-days approaches. It mainly focused on direct nutritional intervention and did not accommodate the sensitive or specific intervention, whilst optimal monitoring and evaluation was not in place either. The programs were also implemented based on the capacity of the local governments which is varied across Indonesia, without adequate cross-sectoral or community supports. The discrepancy between jurisdictions in Indonesia influence the degree of implementation of the program.<sup>7</sup>

The City of Yogyakarta government has taken the 8000-days initiative in 2021 which was enacted with the adoption of Mayor Regulation No 41/2021 as part of their stunting rate reduction program.<sup>8</sup> The 8000-days programs in Yogyakarta comprises intervention toward pregnant women to adolescents.<sup>8</sup> This initiative showed a strong commitment from local leader through adoption of policy that can serve as legal umbrella to improve stunting reduction programs and to push cross-sectoral coordination. The adoption requires related government sectors to take part more optimally in the stunting reduction programs especially addressing the indirect factors of stunting. After the adoption of the program, the 2023 stunting rate in Yogyakarta was 12%,<sup>3</sup> reduced by 44% from the 2018 rate of 21.41%.<sup>2</sup>

Whilst other provinces in Indonesia with high stunting rate are trying to discover approaches and innovations for their stunting programs,<sup>9</sup> the comprehensive 8000-days programs with strong government commitment and adaptation to local capacity should be considered. This can be aligned with the newly launched initiative from Ministry of Health in 2024 regarding the integration of primary health care services (IPHC) with the life cycle approaches. School aged children and adolescent is one of the clusters in the IPHC programs which include preventive approaches such as education and screening. The IPHC is also requiring contribution and collaboration with stakeholders in all level and active participation of the communities which is also the core aspects of the 8000-days approaches. The specific and sensitive intervention implemented for the 1000-days must be extended to 8000-days to gain better outcome.<sup>7</sup>

The 8000-days programs must be comprehensively tailored similar to the 1000-days programs that accommodating adequate evaluation cycles and optimal supports from government and other stakeholders. Evaluation cycle should include evaluation on the input of the programs in each jurisdiction including valid data on the children as the target of the programs and resources to improve planning and implementation. Development of sensitive indicators to monitor implementation and output, outcome and impacts of the intervention is essential. The interventions should be developed to address different spectrums of target population based on their sociodemographic, current nutritional status and other important aspects. Monitoring process and milestones of the programs should become integral part of the adoption of the 8000-days.<sup>10-13</sup>

Multi-sectoral intervention is a requirement for an effective stunting reduction program since stunting is

associated with multiple direct and indirect factors. The sensitive interventions beyond health program will improve the outcomes. For instance, Public Infrastructure and Housing department improve the clean water and sanitation facilities to reduce risk of infection; Communication and Information Department built digital application on stunting to improve monitoring and reporting.<sup>9</sup> The Penta Helix approach must be implemented to support limited capacity of the government stakeholders. Optimal engagement of the business sectors, academics, community, and media play important roles to improve capacity and reach of the programs. However, selective partners especially from the business sector should be implemented to avoid conflict of interest and contra-productive messages such as not collaborating with tobacco industry, alcohol industry or fast-food industry.

Stunting is associated with multiple layers of factors including socioeconomic status.<sup>14</sup> Hence, improvement of the community socioeconomic status through better access to economic opportunities and employment will contribute to the family ability to fulfil their nutrition needs. Meanwhile, other factor such as smoking should be also addressed since it is directly and indirectly associated with stunting. Indonesia has a huge smoking population, with around 70 million adult smokes.<sup>15</sup> Smoking rate is high among low-income family, which hampers the family ability to access nutritious foods, whilst cigarette smokes exposure is also detrimental to child's growth and health. Studies showed association between parental smoking status and higher risk of stunting.<sup>16</sup>

The 8000-days programs can strengthen the 1000-days programs to control stunting in Indonesia. The stunting elimination approach must incorporate sensitive and specific interventions since pregnancy until adolescent with improved engagement and collaboration with stakeholders at all levels. Assessment of the capacity of jurisdictions and mapping of potential resources will improve planning and implementation. Proper monitoring and evaluation must be conducted to measure the progress and effectiveness of the initiative. More importantly, interventions toward the proximal factors of stunting are essential to stop the stunting problem cycle.

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