

Pediatric Research Challenge, Alignment with the National Research Agenda

Research has always been one of the key areas given importance by the Department of Pediatrics. Barriers have previously stifled the conduct of research - inadequate or inaccessible funding, insufficient time due to academic responsibilities, and lengthy research application and publication processes have deterred potential researchers. Thanks to the tenacity of the faculty, the department has surmounted these obstacles and now continues to live up to the University's expectations. The selfless dedication of the editors, peer reviewers, and researchers led to fruition and inspiration to replicate this achievement.

The faculty believes that an unpublished study is close to not having done the study at all. The publication of this sponsored issue of the *Acta Medica Philippina* affirms the department's determination to disseminate knowledge. The department supports its faculty in their bid to comply with requirements for professional advancement.

This is a small step in aligning the department's research projects with the national agenda. The National Unified Health Research Agenda (NUHRA) 2017–2022 focuses on six priority themes, namely: (1) responsive health systems, (2) research to enhance and extend healthy lives, (3) holistic approaches to health and wellness, (4) health resiliency, (5) global competitiveness and innovation in health, and (6) research in equity and health.¹ The articles in this issue succeed in addressing most of these themes.

First, we look at the impact of the COVID-19 pandemic on residency and fellowship training programs. It has affected the social lives, relationships, and spiritual well-being of both surgical and primary care resident physicians.² Major concerns include the decrease in clinical experience, reduction in patient volume, and disruption in educational activities.³ It would be of interest to investigate the risk factors cited in the impact of the pandemic on the attrition rate among residents and fellows.

The recent enactment of the Universal Health Care (UHC) Law mandates the Department of Health (DOH) to operationalize evidence-based Clinical Practice Guidelines (CPGs). The article on CPGs is highly relevant to this theme. In the past, specialty societies crafted their CPGs to consolidate the diagnosis and management of specific conditions. However, it was found that while "most of the CPGs fulfilled essential criteria for quality recommendations (validity and applicability), equity considerations were limited."⁴ The author recommends that the DOH standardize the CPG development process.

With the increasing prevalence of autism, the direct cost of caring for patients with Autism Spectrum Disorder (ASD) poses an economic burden to their families. A review of 31 articles containing data from low to middle-income countries (LAMIC) identified barriers to detection, diagnostics, social policy, and legislation. It would be interesting to study their proposed Theory of Change Model, which describes the strategies and resources to realize UHC for children with autism.⁵ Another review of 48 papers further differentiated several types of costs: 1) medical and healthcare service costs, 2) therapeutic costs, 3) (special) education costs, 4) costs of production loss for adults with ASD, 5) costs of informal care and lost productivity for family/caregivers, and 6) costs of accommodation, respite care, and out-of-pocket expenses.⁶ An expanded cost analysis is appropriate for a more accurate estimation of the costs encountered at PGH.

The article on obstructive neonatal cholestasis uncovers the complications associated with late detection and management of this disease. The Cholestatic Guideline Committee crafted by the North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition and the European Society for Pediatric Gastroenterology, Hepatology, and Nutrition could be a very effective tool in the early screening of biliary atresia.⁷ A scoring system was developed to predict the risk for biliary atresia in patients with cholestatic jaundice.⁸ The next step would be to study its accuracy in a prospective study.

Prolonged antibiotic use in preterm and very-low-birthweight babies predisposes them to fungal infections. The paper on the efficacy of prophylactic antifungal treatment provides a solid basis for adopting this intervention. A systematic review and meta-analysis by Anaraki's group showed a significant reduction in mortality rate using different fluconazole prophylaxis regimens.⁹ The findings should serve as a challenge to the neonatologists to explore the effectiveness of other different fluconazole prophylaxis schedules on invasive *Candida* colonization, infection, and mortality.

The controversy surrounding medical versus surgical closure of patent ductus arteriosus (PDA) is still a hot topic. Medical closure using nonsteroidal agents has been found effective; however, cheaper alternatives are essential, especially in low-to-middle income countries. Research comparing the effectiveness of nonsteroidal anti-inflammatory drugs (NSAIDs) versus no treatment showed “no changes in the odds of mortality or moderate/severe bronchopulmonary dysplasia (BPD) among similar preterm infants born at 28 weeks or earlier following NSAID treatment for PDA initiated 2 to 28 days postnatally and support a conservative approach to PDA management.”¹⁰

Subacute Sclerosing Panencephalitis (SSPE), a fatal viral disease caused by persistent central nervous system infection by a mutant strain of the measles virus, is still a therapeutic challenge. The decline in measles vaccination during the COVID-19 pandemic anticipates a rise in measles cases. Results of this local study on intraventricular instillation of ribavirin show that timing of administration affects outcome. This resonates with the findings of Hashimoto’s group that intraventricular administration of ribavirin improved symptoms in patients who started treatment early.¹¹ Development of new drugs that can cure SSPE remains urgent.

Bronchial asthma is one of the most common pulmonary conditions seen by the Division of Pulmonology. Coincidentally, similar immunologic conditions were associated with low Vitamin D levels. A study by Shabama et al. showed that Vitamin D supplementation reduces the serum IL-17A levels and elevates the serum IL-10 levels in persistent asthmatic patients. This increase in IL-17A/IL-10 ratio is a possible predictive biomarker for asthma improvement in patients.¹² A prospective study looking at the effect of Vitamin D supplementation on asthma exacerbation and including other immunologic markers is worth pursuing.

Non-pharmacologic modalities have also been developed to improve outcomes in patients with asthma. Adapting Written Asthma Action Plans (WAAPs) in the local language especially benefits patients from low-income and less-educated families. A study on the outcomes of children given a WAAP showed significantly reduced emergency room visits, unscheduled OPD visits, admission days, and school absences, thus improving self-care and reducing asthma exacerbation.¹³

The study on adolescent cigarette smoking is encouraging, as it shows low prevalence. The similarity of knowledge between smokers and non-smokers is different from the results of Indonesian children, where the perception of smoking behavior of smokers and non-smokers was statistically significant.¹⁴ Further studies should include the use of e-cigarettes (e.g., vape) and other significant psychosocial factors associated with smoking behavior.

The importance of ethnicity and country-based disease characteristics and management plans is exemplified in two included articles in this issue. The Systemic Lupus Erythematosus (SLE) profile among Filipino adolescents conforms with other Southeast Asian children, except for higher disease activity at presentation and the predominance of proliferative renal disease. Mortality is variable by region due to heterogeneity of healthcare access and socioeconomic status. The knowledge gaps on childhood SLE remain wide, hence the need for more collaborative research to improve the well-being and outcomes of Southeast Asian children with lupus.¹⁵

Pediatric emergency cases require quick decision-making, including computation of drug dosages and fluid volume, usually weight-based. Instances when weight cannot be accurately measured necessitate use of existing tools to estimate this parameter. While the Broselow tape was accurate, the cut-off points should be further studied. A study among Nepalese children which closely resembles the physique of Filipino children showed higher accuracy of the Broselow tape when used for children who weigh less than 18 kg. However, its accuracy decreases as the weight of the child increases, and should be avoided in children weighing more than 18 kg.¹⁶

In summary, the published articles in this issue are in sync with the country’s pressing research priorities. The challenge is to enrich the research climate in the department, indulge in collaborative projects, and engage in translational research aligned with the NUHRA.

Lorna R. Abad, MD, MSc
Immediate Past Chair and Professor
Department of Pediatrics
College of Medicine and Philippine General Hospital
University of the Philippines Manila

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