

moving forward, to identify the factors that cause good health outcomes in order to work towards positive policy changes.

While some nurse practitioners surveyed have good working relationships with individual physicians, most see medical dominance as a barrier to their larger role in primary care.

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### Participatory Capacity Building Strategies for Improving Quality of Child Care Centers in Thailand

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**Background:** Most of a child's brain development takes place in the child's first 5 years. Children in child care centers (CCC) not meeting quality standards are at risk of transmitting communicable diseases that might impede development.

**Methods:** This study was a one group pre-posttest design to study the effect of capacity building of administrators and heads of CCC managed by local administrative organizations (LAOs) in Chonburi Province, Thailand on increased skills, improved compliance with quality standards and health outcomes. 6 local administrators (LA) and 48 CCC heads were trained regarding management skills using a participatory capacity building approach adapted from the UNDP. The program consisted of 3 sequential workshops conducted over 9 months to increase capacity relating to: 1) knowledge of quality standards developed by the Department of Health (DOH) 2) implementation and assurance and 3) evaluation. Before and after the program, data was collected on 2 outcomes of CCC management: achievement of the quality standard and the period prevalence of 5 diseases required to be controlled among CCCs.

**Findings:** Research results indicated that overall knowledge level of LAs and CCC heads improved ( $p = .027$  and  $<0.001$ ), respectively. The heads of CCC increased managerial skills significantly ( $p <0.001$ ), though the managerial skills of LAs did not show significant change. The percentage of CCCs achieving quality standards increased significantly ( $p <0.001$ ). However, there was no difference in disease prevalence between CCCs that met or did not meet the quality standards before or after the capacity building program ( $p = .657$  and  $.688$ , respectively) because many other factors affecting disease were not controlled for in this study.

**Interpretation:** Achieving quality standards is an indication of a well-run CCC with competent staff and this should clearly be a minimum requirement for organizations taking care of children. Our conclusion is that a participatory approach to capacity building constitutes a successful way of building staff capacity. In the future, these approaches should be integrated in a capacity building program before the LAs and heads start their work. Parents need to be key stakeholders to ensure that CCCs are well managed and they adhere to quality standards.

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### Pre-Health Advisor Perspectives on Undergraduate Short-Term Global Health Experiences

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**Background:** The ethics and safety of short-term experiences in global health (STEGH) are of primary concern. With a proliferation of global health degrees and programs encouraging student global mobility, it is increasingly important to characterize STEGHs. Best practices and patient safety considerations suggest that pre-health students should not be conducting hands-on patient care while abroad. It is observed that pre-health students are often motivated to engage in STEGH, in part, because it provides experiences perceived to be beneficial when applying to professional schools. While multiple anecdotes capture concerns around these issues, data to corroborate such anecdotes is lacking. This study aims to characterize the perceptions of pre-health advisors, who have a unique visibility of student activities abroad, with regard to undergraduate STEGHs.

**Methods:** An online survey was distributed using convenience and snowball sampling. Analysis was done using simple statistics and manual coding for qualitative aspects. Qualitative analysis was done using both a priori and emergent themes. Coding was conducted repeatedly by independent coders to ensure inter-coder reliability.

**Findings:** 193 pre-health advisors responded, representing over 67 universities and colleges. 46% were advising for 10+ years. 77% of advisors reported they had encountered students going abroad to seek hands-on patient care experience. 81% of advisors reported they had encountered students seeking global health experiences in order to bolster their medical or health professions school applications. 83% of advisors reported they are somewhat or very concerned about pre-health students getting hands-on patient care experience abroad. 10% of advisors reported they are aware of medical schools that give positive favor to students who have hands-on patient care experience abroad. 35% of advisors reported they felt very equipped to advise on international experiences. Qualitative data analysis is currently underway and initial themes include concerns regarding the scruples of organizations facilitating experiences, concerns about the impacts that pre-health students have on local patients and themselves, and concern with regard to supervisors in the host clinical setting.

**Interpretation:** This study provides evidence that there are great concerns within the academic community about activities undertaken by pre-health students during STEGHs, and that these are often undertaken by students to bolster health professions school applications.

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### Secondhand Smoke (SHS) Exposure and Perceived Health Risks of Tobacco Use among Urban Residents in Five Cities in China

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**Program/Project Purpose:** Exposure to secondhand smoke (SHS) causes many health problems. In China, 740 million non-smokers are exposed to SHS, which leads to approximately 100,000 deaths every year. To systematically assess SHS exposure and perceived health risks of tobacco use, China CDC collaborated with five cities, including Chengdu, Chongqing, Wuhan, Xiamen and Xi'an, to launch the Tobacco Questions for Surveys (TQS) in 2015.

**Structure/Method/Design:** The TQS was a subset of key questions from the Global Adult Tobacco Survey (GATS). The target population was non-institutionalized adult residents age 15 and above in urban areas. Multi-stage cluster sampling was applied to select 2,500 individuals from each city. SAS and R were used to obtain point estimates with standard errors accounting for the complex sample design features. SHS exposure was defined as noticing someone smoking in the past 30 days in specific venues. Perceived health risks of tobacco use included whether respondents were aware that smoking or SHS could cause specific diseases.

**Outcome & Evaluation:** The SHS exposure prevalence was higher than 40% in indoor workplaces (the highest is 53.0%) and higher than 35% at homes across five cities. The SHS exposure prevalence in healthcare facilities was around 20% across five cities. Among public venues surveyed, the SHS exposure in bars/night clubs was the highest (all above 90%), followed by that in restaurants (63.8% to 73.3%). Public transportation had the lowest SHS exposure (7.7% to 12.2%).

While over 85% of adults in all cities were aware that smoking could cause lung cancer, only around 40% believed smoking could cause stroke and heart attack. The perception of erectile dysfunction was the lowest. The awareness of SHS exposure causing lung cancer in adults was the highest (all above 79%), followed by lung diseases in children (71.5% to 81.2%). Smokers were more aware of the harmful effects of smoking and SHS exposure than nonsmokers. As education level increased, the perceived health risks of all diseases increased in all cities.

**Going Forward:** Tailored intervention is needed to reduce SHS exposure, and comprehensive tobacco control policies are needed to protect vulnerable groups. It's important to implement health education on the adverse effects of smoking and SHS exposure, emphasizing health risks other than lung diseases.

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### Attacks on Health Facilities as an Indicator of the Human Cost of Conflict in Syria

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**Background:** The primary indicator of the human cost of conflict has consistently been the number of armed forces and civilian deaths. Although it has been the best proxy available to measure the frequency and intensity of violence, the mortality rate is difficult to enumerate during or even after a conflict. In the case of the conflict in Syria, estimated mortality rates range from 250,000 to

470,000, highlighting the difficulty in obtaining accurate death tolls in a violent context.

In contemporary conflicts, civilian infrastructure is increasingly targeted for destruction. As violations of international humanitarian law, attacks on health-care facilities have immeasurable short and long-term repercussions on communities. In Syria, there is growing evidence that government forces have systematically destroyed its health system by attacks on hospitals, health workers and patients.

**Methods:** The recent surge of technology and its applications has provided an unprecedented ability for human rights organizations to document attacks on health-care infrastructure. Our study utilizes open-source data documenting health-care facilities attacked per month in Syria, and compares that to the trends in the civilian casualty rate. We identify various approaches for identifying health-care infrastructure damage and note the limitations in methods for enumerating civilian casualties.

**Findings:** Our study finds that while the trends in civilian casualties and attacks on health-care facilities show similar patterns in the early stages of the Syrian conflict, the civilian casualty rate stabilized over time whilst the number of attacks on health-care infrastructure increased. We also highlight the consistency between the rate of attack on health-care facilities and other humanitarian indicators. Our findings reveal that only using civilian casualty rates to measure the level of violence would belie the true cost of war, particularly when the collapse of structures used to enumerate casualties may compromise the accuracy of mortality indicators.

**Interpretation:** Attacks on health-care infrastructure are a valuable indicator to include in measuring the intensity of an armed conflict. In the case of Syria, this information could provide a more nuanced understanding of the consequences of the destruction of health-care infrastructure, and could expose the nature of indirect deaths in conflict.

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### Constructing and Governing Partnerships for Capacity Building in Implementation Science

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**Program/Project Purpose:** Partnership approaches are critical to strengthen institutional and leadership capacity in low- and middle-income countries — capacities to both conduct Implementation Research and Delivery Science (IRDS) and to utilize IRDS evidence to improve health outcomes. Institutional leadership and capacity development for IRDS is needed at multiple levels and demands novel approaches to generate high-quality evidence; to make findings accessible and relevant to real world problems; and to influence programs and policies. USAID's Translating Research into Action (TRAction) project has supported IRDS partnerships in several countries, working to build IRDS capacity and improve health. IRDS depends on partnerships that include research, implementation and policy institutions.