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Socio-Hygienic Assessment of the Incidence Rate among Various Strata of the Population-Based on the Materials of Appeals and in-Depth Medical Examinations

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Abstract---One of the main indicators for assessing the state of health is the incidence of the population. In recent years, an integrated approach to the study of morbidity has been widely used to assess the state of health. In this regard, the incidence is studied not only by classes and nosological forms of diseases, the severity of the course, complications, and concomitant diseases but also by specific social and hygienic conditions of work and life, lifestyle, regional, and other features that contribute to the formation of the most common types pathology among the population.

Keywords---epidemiology, health improvement, health, morbidity, prevention.

Introduction

Epidemiological services in various countries conduct continuous and periodic monitoring studies to study the prevalence of diseases assess the health status of the population. The main task of these studies, in addition to assessing the health of the population of a given region, is to identify previously unaccounted for or chronic diseases at the initial stages of their development. Health conditions are undermined by rapid environmental changes. Opportunities exist for frameworks covering public health and environmental sustainability, as well as a general evidence base that reflects the harmful health and environmental impacts of high-consumption lifestyles (Sangi-Haghpeykar & Poindexter III, 1995).

As the majority of researchers emphasize, health assessment as a screening can play a role in solving applied problems of maintaining the health of the population - assignment to certain groups for physical education, sports selection, solution of expert questions regarding their professional choice, military service, and many others. Violations of production and social activities by humans, affecting the environment and leading to environmental disasters, have a negative impact on the life and health of the world's population (Lavanchy, 2005). In the Republic of Uzbekistan, many industrial enterprises also do not always comply with technical and environmental, and production regulations and laws.

A group of scientists Normatova et al. (2014), presents data from epidemiological studies on which it was found that harmful emissions into the atmosphere from an aluminum smelter in Tajikistan cause a serious environmental situation in the surrounding areas of the Surkhandarya region. According to the latest information, the harmful compound of hydrogen fluoride emitted by the aluminum plant exceeds the maximum permissible concentration (MPC) by 2.5 times in the Surkhandarya region, which leads to a sharp increase in the level of some diseases. For example, among women, there is a tendency to increase the rates of such diseases as anemia - 68.7%, endemic goiter - 3.6%, gastrointestinal diseases - 5.5%.

The particular concern of each state is given to the state of health of children and adolescents. The health of the younger generation and the improvement of methods for its protection are the priority tasks of the modern state since the further course of the socio-economic and cultural development of society depends on the effectiveness of their solution (Haines et al., 2006). The development of measures aimed at protecting and strengthening the health of children and adolescents should be based on the most accurate data on the health status of the younger generation, taking into account the factors that form it. The most important tool for the primary control over the state of health is the individual and collective assessment of the growth and development of children, based on the study of the parameters of the physical development of homogeneous groups of the child population (Wang & Luo, 2005).

Analysis of the morbidity structure of children in the Tashkent orphanage by classes of diseases shows that the greatest prevalence among children is nutritional disorders and metabolic disorders - 18.67%, which are caused by diseases of the endocrine system (enlargement of the thyroid gland, malnutrition, general retardation of physical development, etc). The second place is occupied by diseases of the respiratory system - 13.57%, which are formed due to acute respiratory viral infections, tonsillitis, and acute bronchitis (Ernst & Grizzle, 2001). In the third place are diseases of the blood, blood-forming organs, where iron deficiency anemia is most often found out of the total number of blood diseases - 12.5%. Diseases of the genitourinary system ranked fourth. Infectious and parasitic diseases are in 5th place - 6.47%. In the structure of infectious and parasitic diseases, children's infections, helminthic infestations, and acute intestinal infections had the greatest specific weight. In 6th place are injuries and poisoning, which increased with age. Diseases of the nervous system took the next place - 3.88%. It should be noted that the prevalence of diseases of the nervous system, including neuroses, neuro-circulatory dystonia in pupils becomes much higher with age. This is since the health status of this contingent of children is greatly influenced by various psycho-emotional and genetic risk factors: an unhealthy microclimate in a former or current family, the absence of one or both parents, psychogenic trauma, and parental abuse of alcohol (Normatova et al. 2014).

Lu et al. (2019), believe that the improvement of the child population requires the creation of an appropriate sustainable, and effective basis for the improvement and support of children's health (balanced nutrition, physical training breaks between lessons, indoor insolation, etc.) using specific examples medical examinations. It is necessary to take into account the basics of rational nutrition and stimulating a healthy lifestyle among children who do not attend various health circles, to instill in them the sanitary and physical culture of their bodies. Russian researchers have studied the age-related aspects of the morbidity of the adult population in terms of visits to outpatient clinics (Bantyeva & Prilipko, 2013). A detailed analysis of morbidity was carried out according to the data on the appealability of the adult population to outpatient clinics in the context of 6 age groups for all classes and some individual diseases. The trends in morbidity in terms of appealability and its structure among the adult population, reflecting significant differences depending on age, have been revealed. So, if in the first three age groups (18-29, 30-39, 40-49 years old) diseases of the respiratory and genitourinary system prevail, then in the next three groups (50-59, 60-69, and 70 years and older) the leading the place is occupied by diseases of the circulatory system (Kiecolt-Glaser & Glaser, 2002).

A comprehensive assessment of the incidence rates of elderly people of working age allowed the scientists of Krasnoyarsk to establish the quantitative significance of the leading classes of diseases that determine the priorities for improving the activities of medical services: cardiological, endocrinological, ophthalmological, nephrological, urological, pulmonological and, in general, therapeutic and surgical care in the implementation of medical and diagnostic and medical-preventive technologies, especially for persons registered with dispensary (Kutumova et al., 2019).

American scientists conducted a retrospective cohort study with the participation of employees of a large US school district, which examined the effect of gender, age, and body mass index (BMI) on medical and pharmacy costs? Approximately 84% of employees took part in this wellness screening. Women and young people were more common (M = 47.8 versus 49.8, $p < 0.001$). Median medical and pharmacy costs were higher in women compared with men, which increased with age and were higher in people with morbid obesity ($p < 0.001$). Annual pharmacy applications were 18% more likely to be submitted by women than men, 23% more likely to be submitted by persons aged ≥ 60 versus < 40 , and 6% more likely to be submitted by persons with morbid obesity than those of normal weight ($p < 0.001$). Medication use was positively associated with BMI weight classifications for most of the 33 drug types reviewed, except for birth control, herpes, and osteoporosis. There was a J-shaped relationship between BMI and drug use for acne, antibiotics, colds/flu/allergies, eye infections, edema, muscle cramps, pain, and ulcers.

Weight management in old age, especially in people who are underweight and obese, is most important in reducing medical and pharmacy costs. Medication use has been positively associated with BMI for most conditions that are treated except for birth control, herpes, and osteoporosis. The J-shaped relationship between BMI weight

classification and drug use for acne, antibiotics, colds/flu/allergies, eye infections, swelling, muscle cramps, pain, and ulcers may be caused by poor nutrition in underweight people (Merrill & Fowers, 2019).

A large group of scientists from Dagestan (Agalarova et al., 2015) presents the results of a study that was conducted in 2013-2014 based on 3 polyclinics in Makhachkala, Republic of Dagestan. The general morbidity of the population was studied according to the data of the appealability for the last 3 years and medical examinations. The study of the state of health of the working population showed that the morbidity according to the data of the appealability for the last 3 years, in general, amounted to 1322.1 cases per 1000 working population. The incidence among the female population is significantly higher (1396.5 per 1000 female population) than among the male (1247.7 per 1000 male population). The highest incidence rates are noted for diseases of the circulatory system (2541.7%), respiratory system (228.6%), digestion (202.5%), and nervous system (159.9%). In the structure of the overall morbidity, injuries and poisoning account for 49.9%, infectious and parasitic diseases - 43.1%, diseases of the endocrine system, nutritional disorders and metabolic disorders - 42.4%, and mental disorders - 8.9%.

An analysis of the incidence rate detected during medical examinations, taking into account age and gender, showed that the detection rate of diseases increases with increasing age in both men and women. The largest number of diseases falls on the age groups 60 years and older, 50-59 years old, 40-49 years old, and 30-39 years old, which respectively amounted to 38.3%; 25.8%; 17.9%, and 11.6%. High incidence rates are observed in diseases of the circulatory system, nervous system, genitourinary system, blood and hematopoietic organs, and diseases of the digestive system.

The work of Italian scientists Iriti et al. (2020), also addresses the problem of air pollution and health. In 2006, WHO published updated air quality guidelines for a range of air pollutants, which recommend that average annual particulate matter levels be half or less than the limit values set by European legislation. In the European Union (EU) countries, about 80% of the urban population is exposed to air pollution above levels recommended by WHO guidelines. It was only in 2015 that the WHO General Assembly addressed the health effects of air pollution for the first time and adopted a resolution identifying air pollution as the world's largest risk to environmental health. Air pollution is currently viewed by WHO as a serious public health threat, causing a 7% increase in overall mortality for each increase of $10 \mu\text{g} / \text{m}^3$ at an annual average of PM 2.5. This result was achieved thanks to the outstanding efforts of the Director of the WHO Department of Environment and Public Health, Dr. Maria Neira, who is fully committed to highlighting the health effects of air pollution. More recently, at the European level, the air quality directive has been subjected to a suitability test published in 2019; since then, the European Green Deal has announced its goal to more closely align EU air quality standards with WHO guidelines. Every year the European Environment Agency (EEA) publishes its Air Quality in Europe report to assess the indicators of air pollution in Europe and the associated health effects (Archana et al., 2016; Pinto et al., 2017). However, environmental data provided by official regional or national agencies and used by policymakers to take preventive measures, such as restrictions on urban traffic or heating in households, falls within the legal thresholds set by law (usually based on values set at the European level, according to at least for the EU). However, these legal thresholds are not sufficient to fully protect the population from all the effects of air pollution, as recommended by WHO and scientific evidence.

A large group of Chinese researchers presented the Asia Air Pollution Analysis (PAPA): a combined analysis of four studies of air pollution and mortality (Wong et al., 2010). The Public Health and Air Pollution in Asia (PAPA *) Project, sponsored by the Health Impact Institute, consisted of four studies designed to assess the effects of air pollution on mortality in four major Asian cities, namely Bangkok Thailand, and Hong Kong, Shanghai, and Wuhan in China. Air quality measurements included nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter with aerodynamic diameter ≤ 10 microns (PM_{10}), and ozone (O_3) and were obtained from several fixed air monitoring stations located in all urban areas. districts of four cities and that have met the standards of quality assurance and quality control procedures carried out by local governments in each city. For each city, an optimized baseline model was created to estimate the effects of each of the four air pollutants on daily mortality using generalized linear modeling corrected for time trend, seasonality, and other time-varying covariates using a natural spline smoothing function. The study found that the impact of air pollutants on a $10 \mu\text{g} / \text{m}^3$ increase in concentration in Bangkok is higher than in three Chinese cities, except for NO_2 in Wuhan. The magnitude of the consequences for cardiovascular and respiratory mortality tended to be higher than for all-natural deaths at all ages. In addition, the effects associated with PM_{10} and O_3 on all-natural, cardiovascular; and it was found that the death rate from respiratory diseases in Bangkok is higher than in three Chinese cities. The study found that air pollution in Asia is a significant public health burden, especially given the high concentrations of pollutants and high population densities in large cities. Compared to the impact assessments reported in the research literature in North America and Western Europe, the impact assessments of the PM_{10} study were broadly similar, and the assessments of exposure to gaseous pollutants were relatively higher. However, in Bangkok, a tropical city where the overall impact of pollution may be higher than

most other cities, the observed effects were greater than those reported in previous (i.e. Western) studies. Overall, the results indicated that while social and environmental conditions in Asia may vary, it is generally appropriate to apply to Asia the impact assessments on other health outcomes from previous studies in the West. The results also strongly support the adoption of the global air quality guidelines recently announced by WHO.

The improvement in air quality and related mortality in India under the COVID-19 lockdown is discussed in the work of Indian scientists (Naqvi et al., 2021; Gordon et al., 2006). Cities with poor air quality were correlated with higher rates of COVID-19 cases and deaths; conversely, low mortality rates were recorded in cities with better air quality. The results show a correlation between vulnerable regions of COVID-19 and AQI hotspots, suggesting that air pollution could exacerbate clinical manifestations of the disease. The impact of wastewater, industrial wastewater on the environment and human health in Pakistan is presented in an article by Ilyas et al. (2019). The authors state that in most developing countries, one of the most pressing contemporary problems is the management of industrial wastewater. To minimize the risk to the environment and public health, proper industrial wastewater treatment processes are required. To achieve uncontaminated industrial wastewater discharges into receiving water bodies, regular monitoring, proper and appropriate treatment, careful planning, and appropriate legislation are recommended.

The establishment of a wastewater treatment system in China has been described in the work of the authors (Liu & Tang, 2017). Treatment processes in a centralized industrial park of wastewater treatment plants are recommended to be designed following the biodegradability of wastewater streams discharged by tenants to achieve effective treatment. For sufficiently biodegradable streams of biological treatment processes to remove nutrients, there must be enough to achieve treatment goals. On the other hand, for recalcitrant wastewater streams, AOPs such as Fenton oxidation or ozonation should be applied in addition to biological treatment to enhance treatment. With the aim of grouping and categorizing different streams in quantitative terms according to their biodegradability, a biodegradability assessment protocol, derived from OECD standards, has been successfully developed to assess the processability and guide the centralized design of sewage treatment plant trains. Over the past century, the twin processes of industrialization and urbanization have led to an increase in the standard and duration of life. These improvements were associated with rapid changes in people's lifestyles, including changes in physical activity and diet. Thus, paid work, unpaid work, and modes of movement have become less labor-intensive, and basic plant-based diets have given way to animal products, including dairy products, meat, and processed meat (Busse et al., 2010; Asadi-Lari et al., 2004).

The observed economic and social changes have led to an epidemiological transition. First appearing in industrialized countries in North America and Europe, noncommunicable diseases have replaced infectious diseases as the leading cause of ill health and premature death in high-income countries and around the world. Lifestyle factors including physical inactivity and unhealthy diets were the immediate cause. Although both chronic illness and environmental change are the results of lifestyles in modern societies, they have formed separate areas of research and policy. However, as both public and planetary health are under increasing pressure from the environment and climate change, there are increasing calls for a convergence of health and environmental perspectives (Busse et al., 2010).

Healthcare facilities are taking steps to improve energy consumption, reduce waste, and design processes and facilities that are cleaner, in line with international environmental agreements such as the Rio conventions on desertification, biodiversity, and climate change (Baguma, 2017). Healthcare is also one of the important generators of waste. While mastering new technologies, health workers, especially in low- and middle-income countries, using various devices and disposable equipment for treating patients, dispose of obsolete and used equipment, and other medical waste not always correctly, polluting the environment. Hospitals and clinics are not well informed about the need to minimize their environmental impact, especially in low-income countries. More and more doctors, nurses, and healthcare administrators must take into account the impact on the environment, comply with the necessary technologies for medical institutions (Patwary et al., 2011).

An interesting study conducted by Chinese scientists on the impact of the built environment on the viability of two large cities in China: Beijing and Chengdu (Lu S, Shi C, Yang X.) The experience of Chinese scientists can be useful in planning and designing urban development. Developers were asked to use four levels of spatial information when planning: Regulatory Planning Management Unit (RPMU), land use, road network, and construction. A regression model is used to quantify the correlation between urban vitality and built environment in two cities, Beijing and Chengdu. The study found a strong correlation between built environment factors and urban vitality, the diversity of points of interest and indicators of public transport accessibility were positively taken into account with the dynamic development of the districts. However, building density indicators have had completely different effects on the viability of cities with different development situations, and the protection of public health. British scientists

believe that public participation in research on environmental change and health is an important factor in the complex interactions between the environment and health (Maguire et al., 2019).

Technocratic and pedagogical approaches have often met with resistance, so public participation must be viewed in the context of a story that includes contested truths, power inequalities, and political activism. Therefore, it is imperative that researchers and policy-makers, as well as public figures, share best practices and research the challenges of public participation and engagement. This article provides a theoretically based thematic overview of the contributions of the Public Engagement Group on Health and Environment to the work of the National Institute for Health Research (NIHR) Health Research Office in Environmental Change. The authors describe how the Public Relations Team for Health and Environment provided researchers at HPRU-ECH with a vehicle to support access to public views on multiple aspects of research work in three workshops, discuss current research issues in meetings, and support dissemination to local government partners, authorities; and public representation on the HPRU-ECH Advisory Board. The authors concluded that institutional support for constituencies on public engagement can provide channels for establishing communication between the public and policymakers and academic institutions. This can ensure public participation and involvement, which would be difficult, if not impossible, to achieve in separate short-term and unrelated research projects. Proposals for the development of functional plans or policies should be based on the views and experiences of the people who will use or benefit from them. The ultimate goal of research on the interaction between the environment and public health is to create knowledge that can be effectively translated into public policy and that can influence systems, organizations, and individual lifestyle choices.

Factors of public participation in environmental and public health interventions can be broadly classified as either based on a “utilitarian” perspective (i.e. focused on achieving specific health outcomes, information or service delivery) or motivated by “social justice” and the redistribution of power and knowledge (Brunton et al., 2017). Clinical examination as the most important method of primary medical prevention and prevention in the course of its evolution has developed into a coherent system of dynamic monitoring of the health of various contingents, the main goal of which is to preserve and strengthen population health, increase the life expectancy of people, increase labor productivity, study and eliminate the causes, contributing to the emergence and spread of diseases, and on this basis contributes to ensuring the medical and economic security of the country. Clinical examination of the population is an important method of introducing a preventive direction into health care practice.

The effect of mass medical examination, as medical practice shows, cannot but affect a decrease in the overall morbidity, disability, and mortality of the population, which manifests itself within several (5-6) years. Thus, a 10-year experiment in the Russian Federation on the transition to general medical examination in the 1980s confirmed a decrease in temporary disability in groups of dispensary patients: a therapeutic profile (by 18.2% in cases and by 24.1% in days), a neurological profile (by 13.7% in cases and by 24.2% in days), ophthalmic profile (by 11.2% in cases and by 14.6% in days) and otorhinolaryngological profile (by 13.8% in cases and by 21.3% in days) (Rastegaev, 2011).

Thus, the analysis of the literary sources discussed above shows that the problem of improving social and hygienic measures associated with the development of diseases is very acute in different countries of the world. Scientists and clinicians monitor the social and hygienic living conditions of the population and put forward proposals for changing harmful environmental factors, poor nutrition of the population to the governing structures of their regions, requiring an immediate solution. Based on such a systematic approach, specific medical and social measures are being developed, taking into account the state of health in various age-sex and social-professional groups of the population.

References

- Agalarova, L.S., Gamzaeva, M.A., Ilyasova, U.G., & Abdulkirimova, D.R. (2015). Study of the health status of the working urban population according to the data of preventive examinations. *Eurasian Union of Scientists*, (4-7 (13)).
- Archana, A., Datta, C., & Tiwari, P. (2016). Impact of environmental degradation on human health. *International research journal of management, IT and social sciences*, 3(1), 1-6.
- Asadi-Lari, M., Sayyari, A. A., Akbari, M. E., & Gray, D. (2004). Public health improvement in Iran—lessons from the last 20 years. *Public health*, 118(6), 395-402. <https://doi.org/10.1016/j.puhe.2004.05.011>
- Baguma, D. (2017). Public health safety and environment in inadequate hospital and healthcare settings: A review. *Public health*, 144, 23-31. <https://doi.org/10.1016/j.puhe.2016.11.014>
- Bantyeveva, M. N., & Prilipko, N. S. (2013). Age aspects of adult morbidity based on health encounters at outpatient health care facilities. *Social aspects of population health*, 4(32), 7.

- Brunton, M., Eweje, G., & Taskin, N. (2017). Communicating corporate social responsibility to internal stakeholders: Walking the walk or just talking the talk?. *Business Strategy and the Environment*, 26(1), 31-48.
- Busse, R., Scheller-Kreinsen, D., & Zentner, A. (2010). *Tackling chronic disease in Europe: strategies, interventions and challenges* (No. 20). WHO Regional Office Europe.
- Ernst, F. R., & Grizzle, A. J. (2001). Drug-related morbidity and mortality: updating the cost-of-illness model. *Journal of the American Pharmaceutical Association* (1996), 41(2), 192-199. [https://doi.org/10.1016/S1086-5802\(16\)31229-3](https://doi.org/10.1016/S1086-5802(16)31229-3)
- Gordon, R., McDermott, L., Stead, M., & Angus, K. (2006). The effectiveness of social marketing interventions for health improvement: what's the evidence?. *Public health*, 120(12), 1133-1139. <https://doi.org/10.1016/j.puhe.2006.10.008>
- Haines, A., Kovats, R. S., Campbell-Lendrum, D., & Corvalán, C. (2006). Climate change and human health: impacts, vulnerability and public health. *Public health*, 120(7), 585-596. <https://doi.org/10.1016/j.puhe.2006.01.002>
- Ilyas, M., Ahmad, W., Khan, H., Yousaf, S., Yasir, M., & Khan, A. (2019). Environmental and health impacts of industrial wastewater effluents in Pakistan: a review. *Reviews on environmental health*, 34(2), 171-186.
- Iriti, M., Piscitelli, P., Missoni, E., & Miani, A. (2020). Air pollution and health: the need for a medical reading of environmental monitoring data.
- Kiecolt-Glaser, J. K., & Glaser, R. (2002). Depression and immune function: central pathways to morbidity and mortality. *Journal of psychosomatic research*, 53(4), 873-876. [https://doi.org/10.1016/S0022-3999\(02\)00309-4](https://doi.org/10.1016/S0022-3999(02)00309-4)
- Kutumova, O. Yu., Babenko, A. I., & Babenko, E. A. (2019). Socio-hygienic assessment of the appealability of the population older than the working age for medical care. *Medicine in Kuzbass*, 18 (3).
- Lavanchy, D. (2005). Worldwide epidemiology of HBV infection, disease burden, and vaccine prevention. *Journal of clinical virology*, 34, S1-S3. [https://doi.org/10.1016/S1386-6532\(05\)00384-7](https://doi.org/10.1016/S1386-6532(05)00384-7)
- Liu, J., & Tang, M. (2018). Wastewater management approach in an industrial park. *Water Science and Technology*, 2017(2), 546-551.
- Lu, S., Shi, C., & Yang, X. (2019). Impacts of built environment on urban vitality: Regression analyses of Beijing and Chengdu, China. *International journal of environmental research and public health*, 16(23), 4592.
- Maguire, K., Garside, R., Poland, J., Fleming, L. E., Alcock, I., Taylor, T., ... & Wheeler, B. W. (2019). Public involvement in research about environmental change and health: A case study. *Health*, 23(2), 215-233.
- Merrill, R. M., & Fowers, R. (2019). To what extent does sex, age and BMI impact medical and pharmacy costs? A retrospective cohort study involving employees in a large school district in the USA. *BMJ open*, 9(5), e024078.
- Naqvi, H. R., Datta, M., Mutreja, G., Siddiqui, M. A., Naqvi, D. F., & Naqvi, A. R. (2021). Improved air quality and associated mortalities in India under COVID-19 lockdown. *Environmental Pollution*, 268, 115691. <https://doi.org/10.1016/j.envpol.2020.115691>
- Normatova, Sh.A., Ashurova, M.D., Ermatova, G.A., Khozhimatov, Kh.O., Sulonov, G.N., & Boltaboev, U.A. (2014). Actual problems of ecology and public health in Uzbekistan. *Actual problems of the humanities and natural sciences*, (5-2).
- Patwary, M. A., O'Hare, W. T., & Sarker, M. H. (2011). Assessment of occupational and environmental safety associate <https://doi.org/10.1016/j.ssci.2011.04.001>
- Pinto, F., Suwiyoga, I. K., Widiana, I. G. R., & Yasa, I. W. P. S. (2017). Health behavior and status related to mother's death in Timor-Leste. *International Research Journal of Engineering, IT and Scientific Research*, 3(4), 57-65.
- Rastegaev, V.V. (2011). The role of clinical examination in strengthening the health of the population living in rural areas (Doctoral dissertation, National Research Institute of Public Health of the Russian Academy of Medical Sciences).
- Sangi-Haghpeykar, H., & Poindexter III, A. N. (1995). Epidemiology of endometriosis among parous women. *Obstetrics & Gynecology*, 85(6), 983-992. [https://doi.org/10.1016/0029-7844\(95\)00074-2](https://doi.org/10.1016/0029-7844(95)00074-2)
- Wang, F., & Luo, W. (2005). Assessing spatial and nonspatial factors for healthcare access: towards an integrated approach to defining health professional shortage areas. *Health & place*, 11(2), 131-146. <https://doi.org/10.1016/j.healthplace.2004.02.003>
- Wong, C. M., Vichit-Vadakan, N., Vajanapoom, N., Ostro, B., Thach, T. Q., Chau, P. Y., ... & null HEI Health Review Committee. (2010). Part 5. Public health and air pollution in Asia (PAPA): a combined analysis of four studies of air pollution and mortality. *Research Report (Health Effects Institute)*, (154), 377-418.