Global Standards for Pediatric Physicians: Why We Need Them Now

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INTRODUCTION

World Health Organization (WHO) statistics reveal wide disparity in the quality of life for the world's children.[1] Key indicators of health, such as Under Five Mortality Rate (U5MR) and disease morbidity, reveal dramatic differences between children living in developed and developing nations. U5MR, for instance, has been cited as high as 176/1000 live births in sub-Saharan African countries like Niger compared with 3/1000 in European countries like Sweden.[2] The occurrence of deadly disease (eg, malaria, diarrheal disease, tuberculosis, HIV/AIDs) is disproportionately high in developing nations. However, one of the greatest, yet rarely addressed, disparities in quality of life for children is the lack of access to a trained pediatric physician workforce, much of the lack due to constant "brain-drain" from less-resourced to higher-resourced settings. The presence of a quality pediatric physician workforce in developing nations can have a dramatic, positive, and sustained impact on health disparity and the quality of life for children. In this paper, we overview a strategic initiative that will improve the global pediatric workforce, and the quality of life for the world's children, through an organized approach to standardized training and practice, and by empowering less-resourced countries by making available quality training resources that are severely limited in these settings.

Zero Balance Workforce?
There is less than one physician for every 10,000 individuals in sub-Saharan African countries like Malawi, Niger, and Chad. Contrast that with countries like the United States and Great Britain, where there are approximately 25 physicians per 10,000 of the population.[2] The disparity in pediatric workforce is substantially worse. Pediatric workforce data from the United States reveals there are approximately seven board-certified pediatricians for every 10,000 children younger than 15 years of age.[4,5] With no workforce data from developing areas such as sub-Saharan Africa, one can only make conservative extrapolations of data collected and/or estimated in developed countries to population-based data in developing countries. For example, using very conservative extrapolation of US and WHO data[5,6], estimates suggest as few as 26 pediatricians in Malawi caring for approximately 6.4 million children 15 years of age or less (see text) , 30 pediatricians in Niger caring for 6.6 million children the same age and approximately 35 pediatricians in Chad caring for approximately 4.8 million children. However, even these very conservative estimates are grossly inaccurate (see text).

Workforce Imbalances: There are very few, if any, trained pediatricians and pediatric subspecialists in many of the developing countries. As the sidebar indicates, many developing countries have, for all practical purposes, a "zero balance" physician workforce, which translates into very few if any pediatrician providers. For example, we know from sources in Southern Africa that Malawi had only eight trained pediatricians in 2010 caring for 6.4 million children under the age of 15.[3] The Minister of Health in Sierra Leone recently report to the Lancet that there are only two pediatricians in that country caring for millions of children.[4] The west African nation of Liberia has three pediatricians caring for the children of that nation. Most sources reveal these disparities to be a result of inadequate financial resources, unstable governments, and poor infrastructure. However, we further know that workforce disparities exist in large part due to insufficient or non-existent training resources and a lack of access to educational programs and adequately trained faculty; in many cases there are no uniform standards of training (eg, standard curriculum) in these countries, which leads to disparities in the quality of physician being produced.[7] Pediatric training in developing

countries can range from well-organized programs to informal relationships between mentor and trainee. Even where standards for training have been outlined, these alone are frequently inadequate due to a lack of expertise and/or material educational resources.

When considering disparate aspects of the quality of life in children, especially in developing countries, the presence of a trained, competent pediatric physician workforce is vital and should be factored into the healthcare equation. Research conducted in the European Union suggests a potential reduction in Infant Mortality Rate (IMR) by as much as 5.4/1000 simply by the presence of a properly trained pediatric physician workforce.[8] How much greater would the reduction in IMR be for developing nations who currently have little or no pediatric physician workforce? If we can improve the **quality** and **quantity** of pediatricians and pediatric subspecialists in developing countries it should result in a substantial reduction in childhood mortality and disease morbidity, and in a more robust children's healthcare system.

Pediatricians are Physicians Specially Trained for Children: A pediatrician is a physician specialist trained to care for the specific and unique health needs of children, taking into account the entire developmental spectrum of disease/disorder from infancy through childhood and adolescence, and culminating in young adulthood. Children are not small adults. They have special health needs because of the developing nature of their bodies and minds. In addition, the diseases/disorders they encounter and the care they require are markedly different than that of adults. A competent pediatrician has training and experience in all the bio-psycho-social aspects of children's health including extensive exposure to acute trauma and emergency care, preventive care, and diseases and disorders of major organ systems, all of which result in a broad mastery of primary healthcare that is especially relevant to the developmental needs of children. A pediatric subspecialist is a pediatrician with additional and focused training in specialized areas such as cardiology, gastroenterology, nephrology, endocrinology, and so forth. Pediatricians and pediatric subspecialists are dedicated healthcare professionals whose principal role is to advocate for children and their healthcare needs. As a community of physician specialists, pediatricians assume the responsibility for delivering primary health maintenance, mental health care, and preventive services to children at all levels of the developmental spectrum.

If we as a global community of pediatric physician specialist educators are going to positively impact the morbidity and mortality of the world's children then we must help provide a competent, highly trained pediatric physician workforce. In this paper we propose a strategy that will lead to:

1. Worldwide improvement in pediatric training by cataloging and implementing "best practices" of training and evaluation from many of the world's foremost training and educational organizations;

2. An augmentation of the pediatric physician workforce in developing countries and in countries throughout the developed world where there is a shortage of primary care and subspecialty pediatricians; and

3. Access to quality educational resources for training programs worldwide, especially in developing countries, to assist in creating or improving training and accreditation programs.

We believe that success in this initiative will result in a dramatic improvement in the quality of education for pediatricians and pediatric subspecialists entering the workforce, a greater retention of pediatricians and pediatric subspecialists in the most poorly resourced countries, and a significant

improvement in the quality of health for the world's children by creating a more stable and sustainable pediatric workforce.

HISTORY

In early 2008, leaders from the international pediatric education, training, and accreditation community entered into formal discussions about improving children's healthcare at a global level. These discussions initially focused on providing quality assessment tools, such as training examinations, to resource-poor countries as a way to elevate the quality of training. It quickly became apparent that we needed to refocus the discussions around the entire lifelong continuum of training – curricula, evaluation methods, accreditation/certification processes, and continuous professional development activities. These initial discussions led us to explore the concept of creating "core" standards for training and evaluation and some form of accreditation or certification system that individual countries could adopt if they so chose. In order to successfully define core standards for training, we needed to address the essential elements embodied in an ideal training environment. We realized that no single country or organization could effectively pursue such an endeavor alone; thus, we began developing relationships that would foster cohesion across national and regional borders focused on the singular goal of improving the quality of healthcare for children worldwide through the development and promulgation of common, or "core", standards for pediatric training, evaluation, accreditation, and continuous professional development.

Global Pediatric Education Consortium

- American Academy of Pediatrics*
- American Board of Pediatrics *
- Arab Board of Health Specializations*
- Brazilian Pediatric Society*
- Chinese Pediatric Society/Chinese Medical Association*
- College of Paediatricians of South Africa*
- College of Physicians and Surgeons of Pakistan*
- Egyptian Pediatric Association*
- European Academy of Pediatrics*
- European Pediatric Association/UNEPSA*
- German Academy of Pediatrics/German Society of Pediatrics*
- Israeli Medical Association
- International Pediatric Association*
- International Pediatric Academic Leaders Association
- Japan Pediatric Society/Japan Board of Medical Specialties*
- Latin American Association of Pediatrics
- National Board of Examinations (India)*
- National Neonatology Forum (India)*
- Paediatric Association of Nigeria*
- Royal College of Physicians and Surgeons of Canada*
- Royal College of Paediatrics and Child Health*

* Founding delegate organizations (current as of May 2013)

In July 2009, at the suggestion of several prominent international pediatric figures, the American Board of Pediatrics Foundation sponsored a meeting of leaders from 16 national and regional pediatric education, training, and accreditation organizations. These organizations are responsible for setting the standards for training and accreditation in more than 50 nations. The goal of the meeting was to engage initial discussions regarding the concept of creating core standards for training and evaluation.

The shared **vision** that emerged from this meeting was:

> *"As a group of interested educators, we will pursue the concept of creating common "core" standards for the training and evaluation of pediatricians as one method of promoting improvement in the quality of medical care provided to infants, children, adolescents, and young adults worldwide*."

The group agreed to form the ***Global Pediatric Education Consortium*** (see Appendix A) and work together to promote this shared vision. Participants agreed to engage their individual organizations in

embracing this ambitious global initiative. The American Board of Pediatrics Foundation agreed to provide seed funding for the exploratory phase of the initiative until sustained funding could be achieved.

SOLUTIONS: CURRENT AND PROPOSED

The United Nations Challenge

The United Nations **Millennium Development Goal 4** (MDG 4) challenged the global healthcare community with a goal of decreasing U5MR by 67% in resource-poor regions such as sub-Saharan Africa and South/Southeast Asia by 2015. A number of well funded and organized efforts have been underway for many years to address MDG 4.[9] These efforts have typically focused on therapeutic and curative solutions for single disease entities and conditions that would have the most immediate impact on health outcomes in children (eg, malaria, tuberculosis, sanitation, and clean drinking water). Many of these initiatives have produced dramatic improvements in the quality of life for children and their families, and many have resulted in a significant reduction of U5MR and disease morbidity. However, the singular focus on specific diseases or living conditions does not address the long-term issue of adequate health care, nor does it address the sustainable ***preventive*** aspect of pediatric care. To a great degree, a fully trained general pediatrician can function effectively as the hub of the healthcare team, reaching out into the community in concert with ancillary healthcare workers thereby creating a sustained preventive as well as curative approach to children's healthcare. Pediatricians have unique training and specialization that positions them to act in the role of team leaders within the healthcare team. We believe that this is an extremely critical yet missing aspect of many children's health efforts worldwide. As such, we strongly advocate that pediatricians (generalists and subspecialists) be included more directly in efforts to address global health disparities for children.

Millennium Development Goal 4

Target 4a: Reduce by two thirds the mortality rate among children under the age of five

- 4.1 Under-five mortality rate
- 4.2 Infant mortality rate
- 4.3 Proportion of 1 year-old children immunised against measles

Source: www.undp.org/mdg/goal4.shtml

The Integrated Management of Childhood Illness Project[10]

The **Integrated Management of Childhood Illness (IMCI)** project, supported by WHO and the United Nations Children's Fund (UNICEF), has taken a much broader method for addressing MDG 4. IMCI is first aimed at improving the skills of ancillary members of the healthcare team to penetrate local communities and address issues related to the need for sustained healthcare. It targets improvement of local health systems and encourages greater involvement of family and communities in the care of children. The project is also aimed at preventive as well as curative measures in the community setting, the goal being to reduce childhood illness and mortality in order to create a sustained quality healthcare environment. One important aspect of IMCI is its promotion of working together with governments and ministries of health to garner their support and active participation in the healthcare process. This broad-based approach to improving health conditions in developing countries is much more comprehensive than many of the single-disease/condition endeavors and will most likely result in more sustained improvement in the quality of life for children.

Even given its merits, IMCI does not *specifically* address the physician side of the health-disparity equation, particularly the training and competency assessment of pediatricians. Skills enhancement for health teams is typically concentrated on health workers such as nurses, technicians, and midwives.

Through the strength of the WHO, UNICEF, and the global pediatric educational/accreditation community, these initiatives could perhaps be blended together in order to create a comprehensive solution to existing health disparities in developing nations. In harmony with each other, these combined global efforts could have a profound impact on MDG 4 and result in a remarkable reduction of disease morbidity by creating a comprehensive and sustainable approach to child healthcare.

The Proposed Solution

The **Global Pediatric Education Consortium** (GPEC) is currently comprised of a group of leaders from national and regional education, training, and accreditation organizations whose individual missions are to establish rigorous standards for training and practice in pediatrics at the individual physician level and to evaluate the efficacy of those standards to ensure quality of training and patient care. These individuals have agreed to work together to leverage their combined organizational resources around the proposed initiative, which is aimed at increasing the **quality** and **quantity** of trained competent pediatricians and pediatric subspecialists worldwide by providing key educational resources to interested countries, especially developing countries.

The principal strategy of the GPEC is to develop a set of globally relevant core standards for training, evaluation, accreditation, and professional development that will serve as a stimulus for improved pediatric healthcare regardless of geographic boundaries. These standards describe the necessary competencies, content and skills that must be mastered to ensure that training and practice are aligned across national borders as determined by internationally recognized pediatric experts. The core standards are based on **best practices** from around the world so that they encompass not only the commonality of training that is found worldwide, but also to capitalize on the current best training and evaluation methods being utilized around the globe.

The principal goals of this initiative are:

1. Recommend and promote common "core" standards for training, evaluation, accreditation, and professional development of pediatricians worldwide that are based on best practices from the most advanced educational institutions around the world;

2. Make available educational expertise and material resources to all nations, with special attention to developing countries, in order to create or enhance training and accreditation systems; and

3. Improve local and national healthcare systems by helping to create a sustainable children's healthcare environment through the augmentation of a local/national pediatric workforce (both generalist and subspecialists).

Attainment of these goals should lead to improvement in the quality of pediatric training and consequently improvement in the quality of medical care provided to infants, children, adolescents, and young adults worldwide.

A Common Approach to Training, Evaluation, Accreditation, and Professional Development

GPEC has developed a common approach to training, evaluation, accreditation, and professional development of pediatricians that will work in any local or national region because it is based on the common, or core, knowledge, skills, attitudes and behaviors that are requisite for competent pediatric practice. The proposed solution includes a globally relevant, competency-based curriculum that

contains 12 essential competencies necessary for training high-quality pediatricians. This approach provides recommendations for standardized evaluation, accreditation and professional development strategies, and includes access to internationally recognized resource materials, so that physicians can maintain competence through a lifelong learning process throughout their careers.

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The GPEC is essentially creating a *global collaborative network* of educational/accrediting bodies that will allow us to harness the combined resources of the best training and standard-setting bodies in the world. With our pooled resources we can be positioned to provide access to local and national organizations with globally recognized educational and measurement expertise from leading educators and psychometricians. Ministries of health, universities, and training programs will soon have access to cost-effective, valid and reliable assessment tools for training, accreditation, and lifelong learning programs. With such a network in place, GPEC member organizations will be positioned to provide recommendations to interested countries for the purpose of creating local and national residency training programs, accreditation processes, and continued professional development programs.

We have synthesized best practices from the world's foremost training and accrediting bodies and have crafted strategic recommendations for improving the quality of training and practice. Following is a brief description of each of the key elements of the proposed approach:

Core Competency Framework – The recommended approach rests upon a framework of 12 core competencies (see Appendix B). These competencies are contained in a set of documents outlining the **knowledge, skills, abilities and behaviors** that a pediatric physician must attain during training and maintain throughout his/her career as attestation to overall competence. The 12 competencies are common across pediatrics regardless of geographic locale of training and practice. This core competency framework is based upon other frameworks that are currently in use by some of the world's leaders in medical education.

We recommend that these competencies be evaluated during training AND throughout one's career as part of continuing professional development program. The philosophy behind this line of reasoning is that training, skill acquisition, knowledge, and general competence occur in a continuum of lifelong learning. Physicians should be in a continual state of learning and evaluation in order to remain current with advances in medicine and to provide evidence to the public (eg, ministries of health, patients, and insurers) that they remain competent to practice.

Core Curriculum – The Core Curriculum is contained in the overall document and outlines the key elements necessary to train and evaluate pediatricians. Essential elements of the curriculum include:

Abilities, Behaviors and Skills: Several chapters of the Core Curriculum are dedicated to listing the clinical abilities, behaviors and clinical skills and procedures that should be mastered during training. Examples include life support skills, procedural skills, laboratory skills, and diagnostic skills. Each skill and procedure provides a detailed listing of the most common and necessary activities required for

competent practice. This listing of abilities, behaviors, and skills and procedures resulted from a compilation of current practices from around the world (eg, India, Egypt, United States, United Kingdom, Australia, Israel, Canada) in order to ensure that there is a common approach to clinical and procedural-based competence worldwide.

Patient Care Syllabus: The Syllabus is a detailed listing of the content that is recommended to be covered during training and that should be maintained throughout one's practice through lifelong learning and professional development. The syllabus is presented in the form of an extensive outline containing principal and sub-principal areas of patient care knowledge. At each of the sub-principal content levels of the Syllabus there are concise descriptions of the specific area that should be mastered during training in the form of *learning objectives*. These learning objectives describe the actual clinical, behavioral, and professional outcomes expected from the well-trained, competent pediatrician.

This chapter contains all of the basic learning objectives that we deemed most appropriate to acquire during residency training. All of this knowledge covering patient care is structured around the four components that should comprise every clinical encounter: 1) History, 2) Physical Examination, 3) Differential Diagnosis, and 4) Management or Therapeutic Planning. GPEC has highlighted this aspect of the clinical training of a pediatrician because we firmly believe that a competent pediatrician should be able to perform a thorough and efficient history of the presenting complaints/symptoms; he/she should be able to conduct a thorough and complete physical examination of the child; be able to formulate a differential diagnosis that will ultimately form a correct diagnosis; and, be able to plan, execute, and evaluate a therapeutic approach, working in consultation with other specialists as appropriate, in order to manage acute and chronic pediatric conditions. This structural component can aid both faulty and residents with an effective approach for developing and implementing a formal curriculum and plan of study.

The principal areas of focus contained in this chapter include:

Organ- and Body System-based Issues

1. Allergy
2. Cardiology
3. Dermatology
4. Endocrinology
5. Gastroenterology and Hepatology
6. Hematology
7. Immunology
8. Infectious Diseases
9. Metabolism
10. Musculoskeletal Disorders
11. Neonatal Care
12. Nephrology
13. Neurology
14. Oncology
15. Ophthalmology
16. Oral and Dental
17. Otolaryngology
18. Pharmacology
19. Respiratory

20. Rheumatology
21. Urology

Acute, Critical, and Emergency Care

1. Critical Care in Children
2. Critical Care in Neonates
3. Emergency Medical Care
4. Fluid, Electrolyte, and Acid-based Disorders of an Emergent Nature
5. Toxicology and Poisoning Emergencies

Palliative, Surgery, Rehabilitation, and Sports Medicine

1. Palliative Care
2. Peri- and Post-Surgical Care
3. Rehabilitation
4. Sports Medicine

Developmental Issues

1. Behavioral and Mental Health
2. Abnormal Cognitive Functioning
3. Genetics
4. Growth and Development
5. Language, Learning, and Sensory Disorders
6. Nutrition
7. Psychosocial Functioning

Adolescence and Related Issues

1. Adolescent Medicine
2. Gynecology

Issues of Abuse

1. Child Abuse and Neglect
2. Substance Abuse

Community and Preventive Issues

1. Community Pediatrics
2. Preventive Pediatrics

Training Programs – The Core Curriculum includes high-level recommendations for developing or refining quality postgraduate training programs, including suggestions for creating the necessary infrastructure for an effective training program, the patient care knowledge, skills, and abilities and behaviors that should be acquired by all trainees, recommended clinical experiences, and ancillary activities that are necessary for a comprehensive training regime. From an analysis of curriculum from 16 national and regional accrediting bodies, representing more than 50 countries, we are recommending a structure for training that capitalizes on the best approaches to postgraduate training. We anticipate that the resulting training structure will serve as a guide for local training program development. Although there will certainly be diversity at the local training level the recommended training structure will stress the importance of *substantial equivalency* worldwide. GPEC is also considering setting up an accreditation process whereby training programs may receive GPEC-

endorsement for following the internationally developed requirements and standards. If this program moves forward, training programs may request institutional review of their training process; this review will be conducted by educational experts selected from GPEC delegate organizations and will follow guidelines developed by the international community through the aid of GPEC delegates.

Assessment Toolbox – The Assessment Toolbox concept is in the initial stages of planning and development. When complete, it will be a virtual repository of high-quality assessment tools and methods that may be used to evaluate efficacy of training, accreditation requirements, and continued professional development. These tools will include such things as validated work-based assessments, written examinations, self-assessments, peer/patient surveys, standardized observational checklists, and, if possible, performance-based examinations. The GPEC has developed rigorous, but feasible, standards for inclusion in the Toolbox based upon current best practices from the global psychometric/measurement community in order to ensure that approved tools and methods are valid and reliable. Existing assessment tools that have been developed by educational and accreditation organizations may be submitted for review and approval. Once a tool is approved it will be placed in the Toolbox. The global community will have access to all approved tools directly through the GPEC website, or in some cases, through a link to other delegate organization that develop and administer some of the tools. Delegate organizations will determine reasonable cost for each assessment tool and will be responsible for administration or access to those tools that may be self-administered; some tools will be offered to the global community at cost or at no charge.

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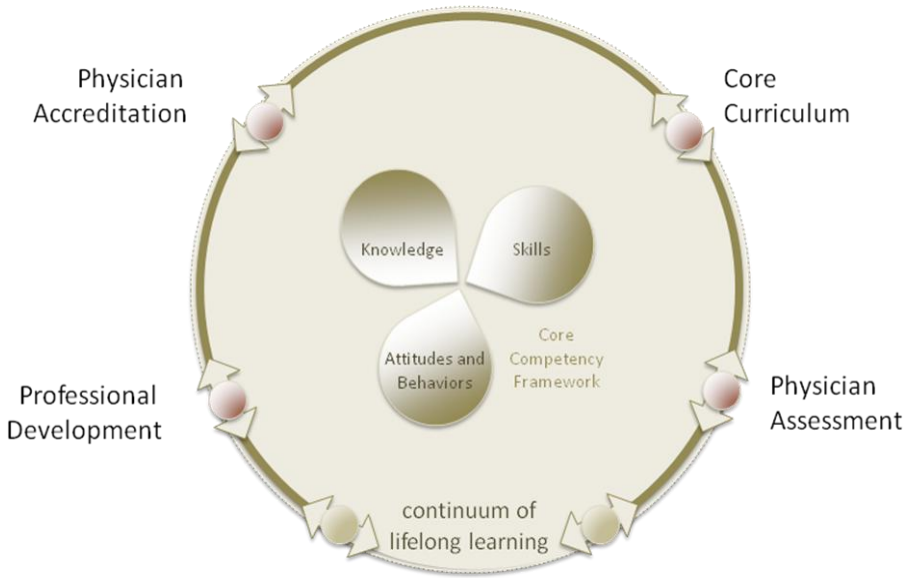
Physician Accreditation – By means of a collaborative network of accrediting and standard-setting bodies, the GPEC is considering developing a program of consultative services to countries requesting assistance for establishing valid accreditation processes (eg, board certification). Accreditation programs would be designed to provide acknowledgment to the public that trainees have completed rigorous training based on globally recognized training standards and that they have been thoroughly evaluated using valid and reliable assessment methods that attest to the efficacy of training. Countries that have national accreditation programs in place could adopt or align their current systems with the recommended global standards if they wish; this would provide them with additional validation of their own internal processes by way of internationally recognized standards for training, evaluation, and accreditation.

Professional Development – A set of guidelines has been developed in which we have outlined a program of continuing professional development to assist pediatricians remain current throughout their careers. GPEC has provided a recommended strategy, based on best-practices, for assisting educators at the country or local level to develop their own professional development program. These programs will engage a process whereby pediatricians have access to current advances in the specialty, evaluation tools to assess their continued competence, and quality improvement activities and strategies to improve the quality of care provided to patients and families.

Consultative Services – A significant focus of the proposed approach is to provide "training to the trainers." The GPEC member organizations will offer assistance to postgraduate trainers to help them in developing a successful training program that is built around the recommended competency framework. Assistance will come in the form of recommendations and access to educational materials, consultation on measurement issues (eg, developing a valid and reliable testing program for trainees), and program development. Some delegate organizations have also agreed to provide expert psychometric consultation to interested training programs for developing appropriate evaluation strategies for their training program. Measurement experts and psychometricians can be available to recommend best practices for use of approved tools in order to optimize evaluation during training. We hope to partner and leverage the expertise and resources of telemedicine activities that are currently taking place in developing countries to begin thinking about infrastructure that needs to be assembled and use of best practices to effect change in the local, regional, and national infrastructures in developing countries.[9]

Figure 2 shows the proposed approach to lifelong learning via the GPEC Model.



A Competency-based Approach to Global Standards for Pediatricians

LIMITATIONS TO THE PROPOSAL

The proposal carries several inherent challenges that we will need to address as a global community of educators and standard-setters. In order for this initiative to be successful it must add more value to the global pediatric workforce than it subtracts. Following are a few of the potential challenges the GPEC will need to remain cognizant of throughout the exploratory and development phases of this initiative.

1. Addressing the current "brain-drain" that exists among many developing nations. Currently, a large percentage of physicians from developing countries travel elsewhere for specialty training, with the understanding that they will return to their country-of-origin following training. Many of these physicians do not honor those intentions, which results in a reduction of competent physicians from the national workforce.[11] Further, it has been shown that physicians who have the opportunity to

complete post-graduate training locally are much more likely to remain in their home country after completing their training.[12] The proposed approach is intended to curtail this by empowering countries to provide high-quality training in the local environment, thus negating the need for physicians to leave their native country for training. Further, by providing the resources and expertise necessary to create local or national accreditation systems, programs or entire countries will be able to provide official recognition that reflect that trainees have completed a program of training and assessment that is on par with the best accreditation and certification programs in the world.

2. Healthcare systems and governments often create complex regulatory processes for physician oversight, which make it increasingly cumbersome to practice medicine and care for patients. A new set of global standards could be perceived as another layer of bureaucracy. We believe that the proposed global approach will help to reduce the burden of regulation for trainers, standard-setting bodies, governments, and ministries of health. The envisioned system of common standards, training materials, expert advice, assessment tools, and recommended approaches to professional accreditation and development, will make it far more efficient to improve the quality of training and evaluation during and after the postgraduate education. By utilizing the power of our combined resources and the abilities of our shared expertise, we have the opportunity to create a reservoir of resources for the global pediatric community that will very likely result in dramatic improvements in the way training and developing the next generation of pediatricians will occur.

3. The proposed approach may be perceived as a threat to current educational or accreditation systems. We are not proposing a replacement for any existing educational and/or accrediting systems or processes. Rather, we envision the proposed global approach to training and accreditation as one way to augment the efficacy of existing educational/accrediting bodies by providing internationally-recognized benchmarks drafted by the world's leading experts. The proposed approach to training and accreditation will benefit developing countries that currently have little or no standardized training and may provide further validation to existing systems of training and accreditation in developed countries.

4. In this proposal we do not specifically address the role of the non-physician and how this impacts the total skill-set needed to provide quality care for children. The skills required to care for children are shared among a health team; not all of the competencies required for quality health are held solely by the pediatrician. We certainly acknowledge that MDGs (especially MDG4) cannot be met by pediatricians alone but require the "team" approach for optimal care. Given the current dysfunction in most of the world's health systems there is a greater need for utilizing community-based approaches, task-shifting, and task-sharing when it comes to the care of children. We will seek involvement of ancillary health care professionals (eg, pediatric nurses) as we have opportunity; at the outset, however, we will focus on the physician side of the healthcare team.

5. Another potential limitation to this proposal is the local/regional/national variation that will most assuredly be present in each of the elements of training and accreditation. The core products for training and accreditation that are developed out of this initiative will only address the common elements that are relevant regardless of geographic locale. Therefore, we must stress the importance of individual countries and/or institutions being responsible for addressing local variation in the healthcare environment as this global approach begins to be embraced.

SUMMARY

The development and adoption of common standards for training and accreditation worldwide will provide a greater probability that pediatric healthcare in developing parts of the world will be *substantially equivalent* to that in more developed countries. Substantial equivalence of training and evaluation standards will be minimally necessary to ensure that uniform training occurs. The current variation in pediatric training should not exist simply because of geographic boundaries or limited national resources, especially when resources can be made available through a combined effort such as we propose. Member organizations of the Global Pediatric Education Consortium have considerable resources that, if pooled, could provide developing countries access to knowledge, expertise, and tools that are requisite for high-quality pediatric training, evaluation, accreditation and ongoing professional development.

The concept of establishing global standards for training and accrediting pediatricians and pediatric subspecialists has not been considered before now. We are not aware of any organized global effort to improve children's health by focusing on the pediatric physician workforce. There have been very successful efforts that focus on improving quality of care around specific health issues, such as the American Academy of Pediatrics neonatal resuscitation program or Helping Babies Breath program.[13] However, for the most part, standards-setting bodies have formed out of national advocacy groups that focus on training and evaluation of physicians within a single country. This nation-centered approach to self-regulation has resulted in relatively little international cooperation and collaboration at the level of training and evaluation. Exceptions to this include the West African College of Physicians, the Arab Board of Pediatrics, and the recent efforts in the European Union (EU) to develop and spread uniform standards for pediatric training and evaluation among EU member countries.[14] In many respects, the model that we are proposing is very similar to these kinds of initiatives, albeit on a global scale rather than regional or transnational.

> **Substantial Equivalence:** A relationship that exists when national education, training, and accreditation bodies agree upon shared principles and values and are carried through and operationalized accordingly. There is a significant amount of commonality to be expected but also agreement to respect national and regional differences.
>
> Dr. Murray Kopelow
> Accreditation Council for Continuing Medical Education

The Global Pediatric Education Consortium believes that this is a particularly opportune time to explore a pediatric collaborative centered on the globalization of standards for training, evaluation, accreditation, and the professional development of pediatricians. It is not difficult to conceive that a collaborative endeavor of this nature has a high probability of success for attaining our shared vision to *improve the quality of medical care provided to infants, children, adolescents, and young adults worldwide* by improving the quality of pediatricians being trained and a stronger pediatric workforce. We are committed to exploring the feasibility of the ideas presented in this paper because of the very real potential of positively impacting the practice of pediatric medicine and its outcomes for children's health worldwide.

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Appendix A

Global Pediatric Education Consortium
Delegate Organization Representatives (2013)

Executive Committee

Chair
Dr. Alfred Tenore
European Academy of Paediatrics

Executive Secretary
Dr. Hazen Ham
American Board of Pediatrics

Treasurer
Dr. David Branski (deceased)
Israeli Medical Association

IPA Delegate
Dr. William Keenan
International Pediatric Association

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Japan Pediatric Society

Appendix B

12 Global Pediatric Areas of Competence

1. Ethics in Practice – The ability of a resident to display ethical principles in practice including the appropriate use of justice, beneficence, non-maleficence, and the autonomy of patient rights.

2. Collaboration – The ability of a resident to work collaboratively in a medical team environment; to know how and when it is appropriate to consult with specialists and other members of the healthcare team; and to conduct oneself in an ethical manner while working with colleagues.

3. Global Health Awareness – The ability of a resident to understand the issues pertaining to basic human rights of one's patients; being familiar with the social determinants of health; being familiar with global health priority setting strategies; understanding the role of global health organizations and the global burden of diseases; being familiar with the structure and function of the national or regional health system; and being familiar with the content and mechanisms for delivering cost-effective health promotion and disease prevention interventions to children globally or in under-resourced settings.

4. Patient Safety and Quality Improvement – The ability of a resident to demonstrate active and meaningful engagement in quality improvement with emphasis on patient safety; know the epidemiology of medical error and harm; familiar with detecting and reporting adverse events; understand the concepts of disclosure of medical errors; understand and apply methods to reduce medical adverse events; understand how to apply key principles of patient safety; and to understand and apply core principles of quality improvement.

5. Research Principles and Evidence-based Practice – The ability of a resident to understand the basic principles of biostatistics; and to be familiar with epidemiology and clinical research design.

6. Scholarly Activity – The ability of residents to begin to demonstrate a lifelong commitment to reflective learning and the creation, dissemination, application, and translation of medical knowledge.

7. Self-Leadership and Practice Management – The ability of the resident to exhibit self-leadership skills and to implement management skills in the practice of pediatrics.

8. Communication and Interpersonal Skills – The ability of the resident to effectively communicate with patients, families, other health care professionals; and to demonstrate active listening.

9. Health Advocacy and Children's Rights – The ability of the resident to respond to individual patient health needs and issues as part of patient care; and to understand how to provide effective health care in local communities.

10. Professionalism – The ability of a resident to display professional attributes and professional actions; and to practice as an expert in the field and as a global pediatrician.

11. Assessment, Diagnostic, Procedural and Therapeutic Skills – A resident must show skill in a number of assessment and diagnostic tests; be able to interpret certain routine laboratory tests and be

aware of age specific ranges for tests; be able to interpret routine pediatric imaging and other tests; and have exposure to certain imaging modalities requiring consultation with specialists.

12. Medical Knowledge and Patient Care – The resident must show proficiency in taking an appropriate history and physical examination of children across the developmental spectrum from birth through the transition into young adulthood; and they must be able to form a differential diagnosis and provide appropriate management options for: 1) diseases and disorders of all organ and body-systems; 2) developmental issues from birth through the transition into young adulthood; 3) adolescent medicine and gynecology; 4) abuse -- substance and physical; 5) simple and complex acute, critical, and emergency care issues; 6) palliative, peri-surgical care, rehabilitation, and sports medicine issues; and 7) they must be familiar with community and preventive pediatric care.

Glossary of Terms

Accreditation – The process whereby the individual physician is examined by reliable and valid assessment tools in order to evaluate their level of competence and attainment of a recognized standard of training and skill acquisition; also referred to as certification. The term can also be used at an institutional level pertaining to review and approval of an institutions practices resulting in some form of commendation for meeting pre-specified levels of practice.

Substantial Equivalence – A relationship that exists when national education, training, and accreditation bodies agree upon shared principles and values and are carried through and operationalized accordingly. There is a significant amount of commonality to be expected but also agreement to respect national and regional differences.