The growth of emergency medicine (EM) has occurred rapidly throughout the world in the last decade. This development has occurred through the formation of national specialty societies and residency training programs; international societies; national, transnational, and international meetings; and international collaboration through less formal initiatives such as continuing education courses and modular train-the-trainer programs. However, these initiatives have taken place primarily in high-income countries (HICs) and upper middle-income countries (MICs). With few exceptions, there has been nominal specialty development in lower MICs and low-income countries (LICs). This situation is likely related to the unique challenges these countries face, including inadequate financing for health systems development and competing health priorities between primary and acute care medical needs.

To foster the development of EM globally, it is necessary to appreciate the intricate inter-relationships between health systems and poverty in LICs. Although some of the health challenges facing citizens of impoverished countries are similar to those in HICs, some distinct differences exist. These challenges include the requirement to function within profoundly resource-poor environments with limited sources of financing, differing epidemiologic patterns of disease, a high prevalence of chronic malnutrition and micronutrient deficiency states, and a struggling public health infrastructure. Many of the health problems facing the LICs and MICs countries are
multifaceted and not amenable to merely strengthening the EM infrastructure. However, EM practitioners with a public health perspective may expand the role of the specialty to meet the needs of the poor globally.

This article introduces funding opportunities, priorities, and challenges in MICs and LICs. Some of the major players in international health and their contributions and activities in MICs and LICs, including acute care initiatives, are discussed. Some of the challenges in global health that may benefit from an EM perspective are reviewed. Finally, suggestions for funding EM programs are discussed.

The major actors in global health

LICs have limited financial resources and complex multisectoral development challenges that often preclude them from launching large-scale health initiatives. Consequently, developmental multilateral and bilateral lending organizations and nongovernmental organizations (NGOs) assume a large role in the design, financing, and implementation of health programs in these nations.

United Nations system

The World Health Organization (WHO), founded in 1948, is the United Nations (UN)-specialized agency responsible for coordinating international health activities [1]. The WHO establishes the global health agenda and is instrumental in defining technical norms for health systems, disease classification, and diagnostic and treatment algorithms. It is organized into six regional offices (African, Eastern Mediterranean, European, South East Asian, Western Pacific, and Pan American) and individual country offices to assist in these activities. The WHO is not a funding organization, however, and these offices have limited resources to fund programs.

The WHO is the largest and most visible of the global health organizations, and most practitioners are familiar with at least some of its myriad activities. The WHO sponsors comprehensive approaches toward a number of health issues of worldwide importance, including HIV/AIDS, tuberculosis, malaria, and other diseases endemic to the developing world, and advocates strongly for treatment and prevention programs.

Perhaps of more relevance to the emergency physician, the WHO World Health Report 2003 "Shaping the Future" highlights the global significance of road traffic injuries and tobacco-related diseases including cardiovascular illnesses [2]. The WHO has been instrumental in organizing ongoing initiatives to reduce the burden of these illnesses. The theme of World Health Day 2004 was road traffic safety and the global burden of road traffic injuries (which falls disproportionately on the developing world) [3].

The UN Children's Fund, UN Population Funds (UNFPA), and UN Development Program are other UN agencies with more limited in-
volvement in international health. These agencies frequently have available funds from private and corporate donations and provide funding assistance to select projects.

Multilateral lending agencies (international development banks)

The World Bank is a UN-specialized agency and is the largest external financier of health-related projects globally ($1.3 billion US annually), although health expenditures comprise only a modest share of total development spending [4]. The primary focus of the World Bank is the alleviation of poverty, and its health-related spending reflects the recognition of the inextricable links between poverty and health. The World Bank provides loans, policy advice, technical assistance, and knowledge-sharing services to member countries to achieve its goal of reducing poverty throughout the world.

The World Bank was chartered in 1944 under the Bretton Woods Agreement and is comprised of 184 member countries. The World Bank consists of several parts, including the International Bank for Reconstruction and Development (IBRD), the International Development Agency (IDA), the International Finance Corporation, the Multilateral Investment Guarantee Agency, and the International Centre for Settlement of Investment Disputes. The term "World Bank" refers to the IBRD/IDA, whereas the "World Bank Group" refers to the collective whole [4].

The country income classifications (low-, middle-, and high-income) were developed by the World Bank. These categories reflect historic operational lending issues and do not necessarily reflect the development status of a given country [5]. Within a given classification, countries may use different health delivery systems and financing mechanisms and may experience distinct health challenges [6]. Accordingly, systems and methods that function in one country may not be applicable to another.

A number of regional banks exist in addition to the World Bank, including the Asian Development Bank, the Inter-American Development Bank, the African Development Bank, and the European Bank for Reconstruction and Development. These banks, like the World Bank, focus on poverty and development assistance but also fund health-related projects, although to a much lesser degree.

Bilateral lending agencies

Numerous bilateral lending agencies that act as agents of direct government-to-government lending (ie, "foreign aid") contribute a significant proportion of international lending for health. These agencies typically represent wealthy industrialized countries, and examples include the United States Agency for International Development (USAID), the Department for International Development in the United Kingdom, and the Canadian International Development Agency.
USAID is housed within the US State Department and functions as an instrument of United States foreign policy. Its primary directive is to promote the expansion of democracy and free markets while improving the lives of the citizens of the developing world. Although USAID continues to support numerous health-related activities around the world, the total amount of health-related spending has decreased in the last several years.

Nongovernmental organizations

NGOs typically fall into one of six types: private voluntary organizations, philanthropic organizations and foundations, professional organizations and societies, and commercial and consulting corporations [7]. Many NGOs have a significant focus on health and have had substantial global health impact through advocacy and programmatic efforts. These organizations may fund health care projects directly or may receive funding from multilateral or bilateral lending agencies. In terms of program implementation and delivery, NGOs may provide services directly or outsource these to contracted providers.

There are hundreds of NGOs working globally and scores working in the field of health. Examples of private voluntary organizations extend from numerous religious groups to organizations such as CARE, Project Hope, Oxfam, Medicins Sans Frontieres, International Medical Corps, and others. There are a number of well-known foundations that have contributed significantly to global health issues, including the Rockefeller Foundation, the W.K. Kellogg Foundation, the Bill and Melinda Gates Foundation, the Aga Khan Foundation, and the Wellcome Trust. There are scores of commercial and consulting organizations, such as Abt Associates, Academy for Educational Development, and American International Health Alliance, that are active in global development and public health issues.

Other common funding sources

There are a number of potential sources of funding outside of the development banks, bilateral agencies, and NGOs. For the purposes of supporting smaller-scale or focused EM initiatives, these sources may represent a more tangible means of obtaining funding.

The United States government has many other agencies and programs besides USAID that engage in health-related activities. The National Highway Traffic Safety Administration, Department of Transportation (NHTSA/DOT); The Office of Global Health Affairs, US Department of Health and Human Services (OGHA/DHHS); and the US Centers for Disease Control (CDC/DHHS) have global health initiatives whose content may overlap the interests of emergency practitioners.

NHTSA/DOT has been active abroad in traffic safety-related initiatives, a component of which included assessing the role of prehospital emergency
medical services in reducing the toll of traffic-related deaths and injuries and supporting the development of prehospital training programs. The OGHA/DHHS maintains an active interest in all facets of global health as it relates to domestic health issues and security. In this regard, bioterrorism and US Border health initiatives are ongoing projects within the agency. Finally, the CDC/DHHS has several projects that focus on issues of disaster preparedness, the health impacts of disasters, and the medical management of these events.

Countries may have funds available for specialty development projects. These funds typically originate from a Ministries of Health, Education, or Civil Defense or from similar governmental agencies. These funding and project opportunities may or may not require a competitive bidding process similar to the development banks; however, like the NGOs, there is usually wider latitude for project proposals and interaction with key personnel.

Other potential funding sources include foundations, specialty societies, special-interest groups, and private benefactors. The funding amounts, funding process, and scope of interest is highly variable, but these foundations can be excellent sources of funds for international EM initiatives. Table 1 provides an overview of these potential funding sources.

### International health and funding agencies and their health activities

The international agencies working in global health development cooperate across numerous channels to identify major global health threats, advocate for training and funds to address these issues, and promote programs and interventions to alleviate their burden. Table 2 provides a general outline of several global health threats and means by which EM practitioners may effectively intervene.

<table>
<thead>
<tr>
<th>Funding institution</th>
<th>Representative example</th>
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<tbody>
<tr>
<td>Multilateral lending agency</td>
<td>The World Bank</td>
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<tr>
<td>Bilateral lending agency</td>
<td>US Agency for International Development</td>
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<tr>
<td>Nongovernmental organization</td>
<td></td>
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<tr>
<td>Private voluntary organization</td>
<td>Medicins Sans Frontiers</td>
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<tr>
<td>Foundation</td>
<td>Rockefeller Foundation</td>
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<tr>
<td>Commercial consulting organization</td>
<td>Abt Associates</td>
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<tr>
<td>Governmental agency</td>
<td>US Centers for Disease Control</td>
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<td>In-country funding</td>
<td>Ministries (Health, Higher Education, Defense),</td>
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<tr>
<td></td>
<td>universities, hospitals</td>
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<td>Specialty societies</td>
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<td>Interest groups</td>
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<td>Private benefactors</td>
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Table 2
Intersection of global health priorities and emergency medicine

<table>
<thead>
<tr>
<th>Major global health issue</th>
<th>Areas for EM Intervention</th>
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<tbody>
<tr>
<td>Maternal health</td>
<td>Training to increase attended deliveries</td>
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<tr>
<td></td>
<td>Management of maternal hemorrhage, infection/sepsis, pre-eclampsia/eclampsia, pre-term labor</td>
</tr>
<tr>
<td>Child health</td>
<td>Acute Management of diarrhea, dehydration, pneumonia, neonatal complications</td>
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<tr>
<td>Cardiovascular illness</td>
<td>Acute management of ischemic heart disease</td>
</tr>
<tr>
<td>Road Traffic injuries</td>
<td>EMS development</td>
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<tr>
<td></td>
<td>Trauma management</td>
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</table>

United Nations system

The WHO is active across the entire spectrum of health-related practices that are relevant to EM. For example, the Injuries and Violence Prevention Department of the WHO, in conjunction with the International Association for the Surgery of Trauma and Surgical Critical Care, have recently published the Guidelines for Essential Trauma Care [8]. This comprehensive document defines the critical skills and equipment required for trauma care in a variety of health care and income settings.

Likewise, the WHO has published its Cardiovascular Disease Risk Management Package for Low- and Medium-Resource Settings, which provides clinical guidelines and minimum essential skills and supplies for a variety of practice settings [9]. Similar care packages exist for other conditions of interest to emergency physicians.

Other UN organizations have acted to support programs for emergency patient care within the primary health care system. Examples of these projects include those supported by the UNDP and UNFPA. The UNDP has funded initiatives in Kosovo to strengthen the care of critically ill patients [10]. The ‘Hospitals Rehabilitation Program in Kosovo’ in the early 1990s, which aimed to rehabilitate the primary health care sector in Kosovo, earmarked funds for improving the emergency care and stabilization of emergency patients in primary clinics. The total funding package for this project was approximately $1 million US. The UNFPA is funding comprehensive programs to support obstetric care in Iraq, including funding for supplies, medicines, and training providers for essential emergency obstetric care and transfer capabilities [11].

Multilateral investment banks

The World Bank has funded numerous health-related projects through its Health, Nutrition, and Population division. The World Bank may provide services directly or through subcontractors (including individuals, corporations, and other entities) using a competitive bid process. Funds have been
used across a broad range of activities from infrastructural improvements and educational initiatives to large-scale public health programs. The health-related activities of the World Bank have as a major focus the Millennium Goals of reducing child mortality, improving maternal health, and combating HIV/AIDS, malaria, and similar communicable diseases.

Notwithstanding the focus on the Millennium Development Goals, the World Bank supported acute care-related initiatives in Moldova [12] and Romania [13] in the early 1990s through the Limited Care component of its Package of Essential Health Services. This aid included funds to purchase ambulances and improve EM services and to sponsor educational courses for local health providers. Total aid for these initiatives approached $10 million US in Moldova and $20 million in Romania, although a number of sector rehabilitation programs were included in these budgets.

Similarly to the World Bank, The Asian Development Bank identified basic emergency care as a recognized priority within its primary health care system reform efforts in Cambodia in the early 1990s [14]. Funds were distributed to support the development of a robust network of primary care clinics in rural Cambodia, including a basic emergency care capability. Total funding for the primary health care reform package was $20 million US, of which emergency care initiatives comprised a small portion.

Bilateral lending agencies

Bilateral agencies typically follow the health policy directives of UN organizations in their programmatic efforts; thus, child and maternal health, HIV/AIDS, and endemic diseases of LICs are a major focus. However, USAID funded the establishment of basic emergency medical services within the primary care system in the then newly independent states of Eastern Europe and the former Soviet Union in the 1990s [15]. These funds were used for educational courses for physicians and nurses and were a component of an overall financing package of $50 million US. Funding within this project continues on a more limited basis.

In general, these bilateral agencies have been active throughout the world and often act in concert with multilateral and UN agencies in planning, funding, and implementing health-related projects. Similarly to the multilateral development banks, these agencies provide services to recipient states primarily through contracted agents. These agents may be individuals, NGOs, universities, or other entities.

Nongovernmental organizations

There is no shortage of NGOs working in the field of international health. Although many of these organizations focus on health-related Millennium Development Goals or short-term refugee relief and disaster response, a significant number concentrate on strengthening transitional
health care systems and sustainable health care initiatives. Within this context, NGOs such as American International Health Alliance (AIHA), supported by funding from USAID, have worked to support the development of emergency health infrastructure and training programs. AIHA contracted with various United States-based entities to partner with recipient countries to establish 15 emergency medical services training centers in the newly independent states of central and Eastern Europe along with training support for hospital-based emergency and critical care [15].

In postconflict regions such as Afghanistan, NGOs such as the Swedish Committee for Afghanistan, Hope Worldwide, the International Medical Corps, MERLIN, Ibn Sina, and the Afghan Red Crescent Society have offered basic and comprehensive emergency obstetric care [16]. NGOs such as Abt Associates (in conjunction with USAID) and many others are working in Iraq to reform and strengthen the beleaguered health care system and provide needed clinical care and public health measures [17].

The funding process: working with global health development agencies

Options for funding EM-related initiatives include the multilateral and bilateral lending agencies, UN agencies, various NGOs, United States governmental agencies, and client countries. Depending on the agency involved, distinct requirements for funding and program implementation may exist.

The multilateral lending agencies follow strict procedures in dispersing funds. Countries apply for a loan for a given project within a specific sector. After an assessment of the proposal by the lending agency, a loan may be awarded to implement the project. Contractors apply in a competitive process to assist the country in project implementation, and funding is awarded through this process, subject to bank approval. The project cycle may span many months and is highly formalized.

Allowances are made within this structure for the reassignment of funds within active loan programs. Cases may arise in which a country wishes to reassign a portion of funds approved within a sector to support additional projects. For example, funds within a loan to strengthen the primary care system may be reassigned to emergency care training programs. This reassignment must proceed subject to oversight by the development bank. A significant change in the scope of services requires approval by the lending institution's board, and the competitive process is enforced.

Emergency physicians wishing to interact with the development banks or countries with active funding contracts should familiarize themselves with the applicable requirements. The World Bank Group web site (www.worldbank.org) provides access to detailed information regarding requirements for consultants and vendors who wish to work with the World Bank. Similar web sites exist for the regional multilateral banks.
The bilateral lending agencies, such as USAID, maintain similar requirements for funding proposals. Specifically, the majority of USAID funding is awarded competitively through explicit invitation or announcement, although unsolicited proposals for projects are accepted. The USAID web site (www.usaid.gov/index.html) provides access to detailed procedures and requirements for those interested in applying for contracts. Additional information may be obtained from USAID personnel noted on the web site or from in-country USAID staff.

The United Nations Agencies such as the WHO and others referenced in this article maintain active web sites that provide mission statements and descriptions of ongoing projects. These web sites provide access to upcoming project proposals, collaborations, and application requirements. Web sites for these organizations may be obtained through the UN web site (www.un.org) or the WHO (www.who.int/en/).

The procedures for contracting with NGOs may vary depending on the agency. Frequently, NGOs act as contractors to development lending agencies and award subcontracts through a competitive process subject to lender requirements. At other times, NGOs may disperse donated funds with less stringent application requirements. Often there is greater opportunity for discussion with NGO staff regarding the application process, and close consultation is recommended to clarify funding and project focus, lending cycles, and any unique requirements. InterAction, The American Council for Voluntary International Action, an alliance of over 160 NGO member organizations based in the United States, maintains a web site (www.interaction.org) providing links to many NGOs working in health care.

Although private foundations are NGOs by definition, they merit separate mention because of their unique circumstances and the opportunities they present. These organizations disperse private funds that evolve from trusts, investments, and similar instruments. Foundations are subject only to applicable laws and their mandate for the selection of projects, and geographic location of clients and contractors may or may not be stipulated in the Foundation's charter. These mandates may exist to promote certain geographic regions, cultural groups, or social structures. They may restrict the use of certain contractors or limit the ways in which the contractor may spend funds. Despite these limitations, foundations usually have a much shorter funding cycle than the development banks and use a less formalized application process. There may be wider latitude in interpreting project requirements, or certain aspects of the charter may be emphasized with respect to the project type. Additionally, there may be more opportunity to interact directly with foundation staff to discuss projects and application procedures. The foundation center (www.fdncenter.org) publishes a directory and interactive CD-ROM listing detailed information on all foundations and recommended guidelines for succeeding in obtaining foundation funding.

To ensure a successful outcome when interacting with any funding agency, several requirements are paramount. One should have a clearly
stated project with goals, objectives, and measurable outcomes. One should have a firm grasp of the mission statement or charter of the organization and adapt the project to this mission as much as possible. Relationships are fundamental to any process, and developing a relationship with the project review board or funding committee may prove helpful in drafting the application. Identifying persons in your university or hospital community who may have an affiliation with a given NGO or country may facilitate the initial stages of communication and proposal preparation. These individuals and relationships may provide a crucial foundation when a contract proposal is being considered by a development agency. A hospital board member, staff acquaintances, professional societies, charitable organizations, and similar contacts may facilitate meeting key individuals. In the case of in-country funding sources, international specialty meetings may provide an opportunity to meet key individuals who can be instrumental in securing funding for projects. Alternatively, one may contact a Ministry to schedule an appointment during a trip to the respective country.

Fostering professional collaborations may strengthen a funding proposal by enhancing the depth of expertise and expanding options for programmatic activities. These collaborations may take the shape of partnerships with a university-affiliated School of Public Health or consortiums of EM programs with a shared interest in global health. Partnerships such as these are important in obtaining funding for projects in LICs where the funding and technical focus is largely on public health and issues related to health services delivery and financing.

A number of factors determine the relative difficulty in obtaining funding from the various lending agencies. These include the presence of highly formalized application procedures and administrative hurdles, the ease with which one can identify contact personnel who can assist in navigating the funding process, and the presence of protracted funding cycles. Fig. 1 illustrates a continuum of ease in interacting with various funding sources, based on the authors' experience and taking into consideration many of the factors cited here. However, each practitioner and institution is likely to have differing experiences in interacting with these entities, based on prior funding and project history. An assessment of the difficulty in obtaining funding for various types of projects is shown in Fig. 1. Modular and continuing education courses for a broad audience of health practitioners are often the easiest to fund. However, EM-specific development projects are often more difficult, reflecting the need to re-orient and re-structure the health and educational system to integrate the specialty.

Summary

The specialty of EM is developing rapidly throughout the world. This growth is relatively lacking in the LICs, however. The lack of resources and
financing capabilities in these regions may hinder specialty development. Further growth of the specialty in these countries requires an understanding of their health priorities and the global health and development agencies that often assist these countries in supporting the health sector. Identifying health priorities in these regions that intersect with EM is crucial and may form the basis for further expansion of EM. Many potential funding opportunities exist within the governmental and private sector, but all require some familiarity with application mechanisms and project cycles. Building relationships with personnel within these agencies and countries of interest is often fundamental to successful programmatic funding.

References


