

Global Trauma Prevention Expert Consultation: Day 1 Discussion Group Notes

July 28–29, 2015
NIH Main Campus

Organizing Committee: Ruth Brenner, Maggie Brewinski-Isaacs, Alison Cernich, Vesna Kutlesic, Bruce Simons-Morton, and Myat Htoo Razak

Welcome: Myat Htoo Razak

Dr. Razak welcomed meeting participants on behalf of Dr. Roger Glass and the FIC.

Dr. Razak said that FIC has run the global injury research training program since 2004 and that, although the program's funding is limited, its scope is vast. He reported that FIC is in the process of developing and releasing a funding opportunity announcement (FOA) that will provide grantees with an additional five years of funding.

Dr. Razak thanked NICHD director Dr. Alan Guttmacher, Prevention Research Branch chief Dr. Bruce Simons-Morton, and the organizing committee. He said that in order to continue to succeed, FIC will need to build collaborations with all NIH institutes and centers and other agencies. He encouraged participants to use their time at the meeting to set a course for future implementation.

Introduction: Bruce Simons-Morton

Dr. Simons-Morton welcomed the meeting participants on behalf of the organizing committee. He said that NICHD has a longstanding interest in injury. As communicable disease has declined, the relative burden of injury has risen, especially in low- and middle-income countries (LMIC). The field of injury is rife with disparities that disproportionately burden LMIC.

Dr. Simons-Morton said that the meeting's goals were to provide a research forum for international groups and identify principles that will guide future injury research. He reviewed the agenda for the day, which included half-hour presentations followed by half-hour discussion sessions and some time for participants to meet in smaller working groups.

Dr. Simons-Morton said that the meeting would produce a report, which could become a journal article or other publication for external audiences.

International Collaborative Trauma and Injury Research Training

Dr. Adnan Hyder, Dr. Amber Mehmood, and Dr. Junaid Razzak delivered a presentation on the Johns Hopkins University-Pakistan Fogarty International Collaborative Trauma and Injury Research Training Program.

Discussion

Question: The grant money you have received from the FIC is not sufficient to support all of the work you have shown here. How have you leveraged your limited funding to produce such outstanding results, and what lessons have you learned?

Answer (Dr. Hyder): Partnerships are an essential part of any collaboration in a context of scarcity. When institutions and individuals on both sides of the partnership are truly vested, they will go beyond their written obligations and will contribute without expecting to be paid. Building institutional ownership is also very important. The leadership at AGU is truly dedicated to making this successful. And though some of the people in those positions have changed, because the program is well known across the university, whoever comes into that position is aware of it and will be supportive.

The biggest challenge is the national context. It has been very difficult to invite people to come to meetings and workshops. Fortunately, the Pakistani diaspora is an amazing group of researchers and clinicians across the world who are happy to come back. They will go regardless of the violence, because they feel they can handle themselves.

Answer (Dr. Razzak): This is an innovative program. Emergency rooms (ERs) were a problem for every hospital and medical institution here. We told them that we would accurately develop capacity that could solve their clinical problems. We said we would retain high-quality people and do academic work. Our innovation and the university's needs came together.

Question: What are the impacts you can show that would get the government more involved? Making ERs more cost effective or a first site for screening of other diseases would add value. The value you add, as defined by your research, could lead to policy changes and groups interested in investing.

Answer (Dr. Razzak): The government has begun to invest heavily in emergency medical services. The private-sector organization we helped establish became an example of how the government could expand services to the rest of the country. In our province, the government is interested in making emergency and trauma care the main project for the next five years. They see it as a visibility issue. Major movement could also happen on the emergency department (ED) side. On the prevention side, part of the issue has been ownership. The ministries of health still don't see injury as their issue. We need to show them they can do something about it.

Answer (Dr. Hyder): Public/private partnerships have been successful in Pakistan. The road traffic injury surveillance system we mentioned was developed with Toyota, who was interested

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in using corporate responsibility funding to do something useful. The Amman Foundation, a private investor agency made up of expatriate Pakistanis, has begun investing in injury and trauma thanks to an appeal from Dr. Razzak. Now four or five districts in Karachi are fully staffed with ambulances. These linkages are critical, not just to sustain our work, but to engender new investments.

Question: How have you reached out to government sectors like the justice system, traffic, and law enforcement to convince them that injury is an important issue? What has worked for you? What hasn't worked?

Answer (Dr. Razzak): The agencies we worked with did not require much convincing. The difficult part was bringing them together and keeping them together in the absence of a formal government structure. We brought them together regularly to continue engaging with each other and the problem. It's also important that countries see you as an insider and not an outsider.

Answer (Dr. Hyder): We learned the value of being a neutral stakeholder. If you can leverage that, you can convene those who don't talk to each other or don't want to talk to each other. The convener has to be respected and very credible. We have that power, and we use it effectively.

We've also had very good luck in finding a few champions within the government. We approach people and speak to their interests. That's how some of these things became part of national health policy. You have to recognize your own value but also be nimble and take advantage of opportunities, whether they're individual or institutional.

Question: To evaluate this program, we need to see changes. Can you talk more about setting up surveillance and efforts to improve the quality of injury data?

Answer (Dr. Razzak): There are two major efforts to collect data. One was around road traffic injury. In almost all EDs, the clinical data is not captured. When they go home, they take their medical records with them. If they are admitted to the hospital, then a file is generated. The institutions don't have the capacity to handle that kind of paperwork, so they just don't keep ED records. We started by putting people in five major EDs 24 hours a day, 7 days a week. Initially there was a lot of resistance, but eventually the hospitals saw value in it, because they then had data they didn't have before. Now they know how many patients they see and how many lives they save. We added clinical questions over time, including the injury severity score, and trained people in collecting those data. The cost of collecting this information was pretty low. For five hospitals, excluding the cost of our own time, salary support was \$30,000, and we were able to collect data on hundreds of thousands of patients. The system is still in place. Initial funding came from Toyota Motors, and now other philanthropists are supporting it. In one of our publications, we highlight the lessons learned from this project. On the national ED survey, we took on an even bigger challenge: collecting information from all patients, not just those with injuries. Some EDs see about 2,000 patients a day. We placed five or six data collectors in the hospitals. Despite our best efforts there, we were missing 30% of patients. The 270,000 patients we captured represent only 70% of the total patient population, but that's still probably the largest database from EDs in any developing country. The top three causes of ED visits were

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injuries, fever, and chest pain. That's interesting information and can affect how you train people. We rarely see fever at Hopkins. In the Pakistan EDs we monitored, about every third patient has fever.

Answer (Dr. Hyder): The larger issue may be expanding from a single project to national impact. Now that we've been working in Pakistan for a decade, there are other people talking about injury and trauma data. There is a relatively new emergency medical service in the Punjab province. They're collecting their own data. So we now have another partner. The idea is to generate more such people so that eventually there is a large demand from different players. That would help in data quality and utilization, which is eventually what we all want.

Comment: It's interesting to hear that fever is one of the presenting concerns in the ER. This suggests that preventive care and regular physician visits are not happening.

Response (Dr. Razzak): In Pakistan, people only seek care when they're really sick. The idea of just visiting a physician or making an appointment doesn't happen. Even visits to outpatient clinics are usually for acute care. That's evident in the numbers of patients that get admitted to the hospital from the ED.

Question: What patterns of injury have you observed in pediatric patients?

Answer (Dr. Razzak): We analyzed injuries in the Pakistan Demographic Health Survey and found that injury was the third leading cause of death for children 1 to 5 years old. This was a surprise, because while we talk about pediatric pneumonia and diarrhea, we almost never talk about injury in the national context. The most common causes of injury were falls, traffic injuries, and drowning, which was another surprise. We don't traditionally think about drowning as a public health issue.

Answer (Dr. Hyder): Half of Pakistan's population is under age 21. This is a very young population. There has not been much information available, but in everything we've seen, injury is in the top three causes of death for children ages 1 to 18. We feel that there's an undocumented burden of violent injuries as well. Poisonings—intentional and unintentional—are almost never reported. One of our fellows is trying to establish a poisoning control center in Karachi to address this very issue. What's clear is that the patterns are changing. As we get better at controlling pneumonia and diarrhea, the proportion of death from injuries is rising.

Question: There is a lack of public health education around injury prevention. The media has an important role and could have an impact long before a family needs to visit the ER. Simple interventions like encouraging the use of seatbelts and helmets can reduce a lot of these numbers with a modest investment. How has the media in Pakistan taken on these challenges?

Answer (Dr. Razzak): The traffic police have attempted public health education, but I don't know how effective that's been. Private-sector organizations, especially motorcycle companies, talk about helmet use, but there hasn't been any large coordinated effort.

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Answer (Dr. Hyder): Over 10 years, Pakistani media has become friendlier to safety messages. That's a first step. The media is reasonably free in Pakistan, so that has been a focus. Our trainees engage with the media and especially social media. We've also seen engagement with professional associations like the Pakistan Pediatric Association (PPA). The PPA has been a strong public health proponent for years, so they offer a ready audience. Things are changing, but they're not ideal.

Comment (Dr. Mehmood): As trainees, we struggled to balance research with our other responsibilities. When you are very junior in your career, people push you toward clinical work and don't take you seriously as a researcher. To establish yourself as a researcher, you need time and financial support. This has to be addressed.

Comment (Dr. Razzak): This program shows how a small research program can contribute to partnerships at the national, public, and private sector levels. There are many areas where this kind of small but expanded and extremely important research training can take place, even in very challenging countries like Pakistan.

Injury and Trauma Research Training for Guatemala

Dr. Erwin Humberto Calgua Guerra, Dr. Sergio Nicolás Martínez Siekavizza, and Dr. Therese Richmond delivered a presentation on the collaboration between the University of Pennsylvania, Universidad de San Carlos de Guatemala, and Universidad Francisco Marroquín.

Discussion

Comment: There is a documented relationship between alcohol and violence. As such, there are policies in the U.S. and elsewhere that have helped reduce alcohol-related violence. Limiting access to alcohol, reducing alcohol outlet density, and raising the minimum drinking age can all make a difference. I encourage you to look up the plan by Pan-American Health Organization (PAHO) to reduce alcohol-related harm in the Americas.

Response (Dr. Richmond): We do a lot of work examining alcohol outlet density, and the intersection of alcohol and injury is something we're pursuing. One of our fellows is analyzing the relationship between payday loans and violence; it would be interesting to review his work in relation to alcohol.

Question: I was happy to see that one of your projects is looking at the relationship between intimate partner violence (IPV) and HIV. What kind of partnerships are you developing with HIV organizations? They likely have deeper pockets than the injury community.

Response (Dr. Richmond): You're right about funding for HIV. We're currently working with Robert Gross, an HIV researcher at the University of Pennsylvania, to connect IPV and HIV.

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Response (Dr. Calgua Guerra): When it comes to HIV, everyone wants to study medicines. Organizations aren't interested in supporting the study of violence in the context of HIV. They wanted to know about new drugs. Only one clinic has accepted us. It took almost a year to develop this program. It's challenging to bring the HIV/violence intersection to the public.

Comment: Violence is such a risk factor is for HIV. If you can impress on the community how working to reduce IPV will reduce HIV, everybody would win.

Response (Dr. Richmond): Violence is a risk factor for HIV, but HIV and HIV disclosure are also big risk factors for IPV. These are, for the most part, young families with kids, so the violence has far-reaching consequences. How HIV is disclosed can place people at risk for violence. There is a lot of room for improvement here.

Response (Dr. Calgua Guerra): We are also partnering with Boston Children's Hospital on a study of HIV in adults and children. Before this program, secondary data studies were not possible in Guatemala. Now they are.

Question: What kind of training are you doing in translational research? There's a lot of good basic epidemiological research underway. How you get this work implemented in the communities and ensure an uptake in training and mentorship?

Response (Dr. Richmond): We're 4 years into our Fogarty grant. Moving to a translational research model is something we're thinking about but have not yet begun planning. We need to get the basic scientific toolbox first. Translational work can be the next step.

Response (Dr. Calgua Guerra): One of the most important parts of this program is learning how to use this evidence and translate it to policy. Most of our trainees are called in as consultants to develop reports. They produce papers that can be used as an evidence base for public policy. We create clear explanations for the ministry of health and other partners so they understand how science helps policy.

Question: Violence is a significant issue in Pakistan as well. Who is your partner on the policy side? Our ministry of health will not even talk about violence. Do you meet resistance when encouraging the government to own violence as a public health issue? Do you work with police and other players?

Answer (Dr. Calgua Guerra): The University of San Carlos is actually part of the Guatemalan government. This gives us an open door to high-level officials. We can go directly to ministers and present our case. We have also developed a good relationship by inviting them to develop programs with us. We have various agreements with local officials in various areas, and we use our capabilities to interact with the population. Dr. Martinez Siekavizza has been key to our success. By the time I joined the project, he was in direct contact with the vice president of Guatemala.

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Answer (Dr. Martinez Siekavizza): My university is a private institution, and the emphasis is on the end product. The vice president, who was a thoracic surgeon in the U.S., expressed interest in violence and injury. He created a national council of trauma, which I saw as a political opportunity to get things done. We were able to get some letters from him and commitment from the government. This has since changed. We no longer have a vice president, but we are optimistic that this will change. The recent popular uprising gives us another opportunity to lobby to the community. We're hopeful that we'll have people in important places. It's vitally important to convince politicians that this science is important and we can give them a product that they can use.

Answer (Dr. Richmond): The University of Pennsylvania rides into Guatemala on the credibility of our partners. We treat that seriously. They take the lead in making these political connections, and we help support them. I met with a past project officer from an organization that funds a lot of global health projects. She made the case that we sometimes focus on the ministry of health when we should focus on the ministry of finance. We could consider how violence affects economics, especially since violence is 7% of Guatemala's gross national product.

Question: It's clear that you're looking at the realities people are facing, especially women and children, in a difficult context. Sometimes these can become very academic questions that are disconnected from the reality of life that people are living. Thank you for presenting this in such a heartfelt way. I wanted to ask about the dual nutritional burden study. I heard you would be looking at issues of under-nutrition and obesity, and the link with violence. Those are all risk factors for poor pregnancy outcomes for both women and infants. Would you consider looking at pregnancy outcomes and how those relate to the factors you're considering now?

Answer (Dr. Calgua Guerra): Pregnancy is a big issue. We see a lot of girls aged 10 to 14 becoming pregnant, primarily as the result of sexual violence. This has historically been considered almost natural. The laws are more stringent now, and we would like to study the effects of these changes. There are two groups of concern: child-bearing women, and much younger child-bearing women and children. These are deplorable situations. The definition of violence is also changing in Guatemala. Previously, there were only three categories of violence: verbal, sexual, and physical. Now the law includes economic violence. This should be studied, too, especially in a country where there is so much disparity and poverty.

Question: Dr. Richmond, you mentioned getting in touch with the ministry of finance. What about the ministry of tourism? They've got to be interested in reducing violence.

Answer (Dr. Richmond): That's an interesting point. Certainly if you looked at the warnings on the U.S. State Department website right now, you would not choose to go to Guatemala.

Question: Have you contacted or been contacted by other researchers in the region to broaden work in that triangle of disproportionate violence? Are you seeing traction in this area?

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Answer (Dr. Martinez Siekavizza): Historically, Guatemala has been a leader in many things—both good and bad. I often get emails from other countries that are interested in pursuing this.

Answer (Dr. Calgua Guerra): We would like to have information from other countries, but there haven't been many instruments for comparison. Right now, PAHO is trying to get us all together. In general, researchers across the region do talk to each other, but that has not been the case for violence because people are afraid of studying it. To make this work, we will need to figure out how we can reduce the risks of studying violence and injury in this region. Researchers in these areas are under surveillance by the police, the military, and paramilitary groups. To move forward with regional cooperation on this subject would require partnerships with law enforcement and intelligence agencies, because if our data is inconvenient to specific groups, we could be killed.

Answer (Dr. Richmond): We've shared resources with colleagues doing work in Nicaragua. My school is a World Health Organization (WHO) collaborating center for nursing and midwifery, and PAHO is our region. The nursing workforce in Guatemala is an excellent resource that should be tapped.

Question: To have impact, we need information. How are you bringing a critical mass of researchers to provide better evidence and recommendations to policymakers nationally and regionally? How are you building institutions in your own country for global injury research?

Answer (Dr. Calgua Guerra): Five years ago, we developed a strategic plan at the research center and developed research priorities. The first is violence and injury. The research center is now focusing on developing research questions on violence and is trying to bring people to the associate investigator research program. There are many medical doctors who want to do research. We are training them in different programs, like the program in Pakistan. We have a goal to become a center of excellence in violence.

Answer (Dr. Martinez Siekavizza): Years ago at my university, we did some pilot studies on violence and presented the results to the cabinet and the president. We don't know what happened after that. Now, we're becoming more noticeable. We will call upon policymakers again soon.

South Africa: Injury Prevention Research Capacity Building

Dr. Gail Wyatt, Dr. Claire van der Westhuizen, and Dr. Richmond delivered a presentation on the South African Trauma Research Training Program at the University of California, Los Angeles.

Discussion

Question: Has your research impacted national or regional policy? Do you have mechanisms for using evidence-based approaches to effect change?

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Answer (Dr. Wyatt): We received a grant to study rape in South Africa. The data we had was very disturbing. At baseline—immediately following sexual violence—the women we interviewed were very resilient and strong. One year later, many of them were suffering cultural stigma, victim blaming, and ostracism from their families and communities. They were isolated and began to believe that they were to blame for what had happened to them. We have a lot of work to do in terms of moving this information to a government level. But this is also work that needs to be done at the community level. In addition, about one quarter of these women became HIV positive as a result of having been raped. The intersection of HIV, trauma, and mental health may be another possible area for funding. The most important thing is to realize how carefully we need to move in addressing the community and the culture.

Answer (Dr. van der Westhuizen): We have a lot of great policies in place in South Africa, especially when it comes to protecting women. The recent adoption of a violence prevention policy in the Western Cape was groundbreaking. The difficulty is in implementation and enforcement. Phodiso exposes scholars like me to great academics and researchers who have existing links with the department of health. I've been able to participate in mental health and injury prevention working groups. It has given us an opening to be able to influence policy and implementation. We're participating and talking as much as we can about our data and findings. We're advocating for improved data and for better communication. We're bringing a health perspective to policy. I think we are making inroads. I can't say that there's a single policy that has come from our work, but I believe that we have opportunities and we're building relationships as we move forward.

Comment: In all the programs we've seen so far, there's still a focus on advancing careers, as opposed to advancing injury or violence prevention. It's frustrating for the WHO to go into countries where we know research has been done but it has never been communicated with policymakers. In part, that's because policymakers do not read journals. If we continue to emphasize the number of articles that are published based on this research instead of giving equal emphasis to the uptake of research in policy, we're not going to move forward. We're just going to generate lots of articles. And that doesn't help me when I go to the minister of health, if the articles are stuck in a journal and not in the media or being shared with ministries. We need to shift the focus away from publication or perish. In this presentation, you had some incredibly rich data. They really need to be taken to that next step.

Response (Dr. van der Westhuizen): Phodiso gave me the opportunity to become involved with the Center for Public Mental Health. They're currently interested in injury prevention and violence as they relate to mental health.

Response (Dr. Wyatt): Phodiso began in 2004, when South Africa was just 10 years out of independence. It was literally like starting from scratch. It has taken us this long to get prominent individuals to begin speaking out. Thank you for your perspective on publications. They are important, but we are also making an effort to engage with policymakers. We invite the ministries to attend our meetings, but the enthusiasm is just not there. But we will persist, and we hope to make a difference.

Comment: Papers versus policy is an important consideration. But the WHO has its own responsibilities. For the NIH, publications and research capacity are very important. These programs will need to publish. But moving to translation is the next step, and for that, we'll need collaboration. We all need to work together.

Injury Control Research in Ghana and West Africa

Dr. Charlie Mock delivered a presentation on the research training program supported by a collaboration between the Harborview Injury Prevention Research Center at the University of Washington and Kwame Nkrumah University of Science and Technology in Kumasi, Ghana.

Discussion

Question: Have you used formal oral autopsies with family members as a way of getting the details of individual injuries?

Answer: We haven't, but it's something to consider.

Question: Does Ghana have national health insurance? If so, is it possible to use information collected for insurance purposes?

Answer: There is national health insurance. There may be some surveillance arising from the national health insurance scheme, although I haven't heard of any.

Question: It seems as though the police and transport sectors have formed a bloc and will disagree with the ministry of health in all things, even disbelieving health data on road injuries. Did you find this to be true in your work? How did you bring those sectors together for road safety and injury prevention in general?

Answer: This is a problem in every country. There needs to be more intersection and collaboration. It's far from optimal right now, but I've seen more collaboration between different there than I have elsewhere. In part, it's ad hoc and individual, not institutional. What country do you think does it best?

Comment: In general, I would guess that some middle-income countries are slightly better off. We saw better cooperation in countries like Turkey and Malaysia, and some good cooperation in Ethiopia. It's very tough.

Comment: That might be a good project for a social-science-oriented trainee: to look at countries through a metric of intersectional collaboration.

Question: How did your quality improvement (QI) efforts become sustainable without continual funding? Was that effort focused exclusively on injury, or was it broader?

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Answer: That particular project and study were focused on trauma. It was heavily influenced by maternal death audits, which are a successful and low-cost technique for reducing pregnancy-related mortality and making pregnancy safer. The existing standard operating procedures for QI at the hospital are general: Departments meet to discuss cases. This project worked through those meetings. It's the mantra of many collaborators: Make your work feasible, realistic, and sustainable, and build on existing methods. Lead institutions to take a step up from what they're already doing. Improvements can always be made. There's a lot that can be done in building on the foundation of departmental meetings, documenting discussions, making them more rigorous, purposely looking for corrective action to take, and then following up. Those things don't really cost much. That's what this project and its spinoff have tried to promote.

Comment: There are a number of low-cost traffic surveys that could help with road safety issues. The fact that the community supported the speed bumps suggests that you might be successful there.

Comment: The Cardiff model in Wales is a good example of collaborating to look at the geographic distribution of assault using law enforcement, public health, community organizations, and emergency care to develop interventions to reduce assault. It seems to be very effective.

Comment: Your program has highlighted an important element of training: ensuring that people who have been trained as researchers have work to return to.

Question: How are you working with the Medical Education Partnership Initiative (MEPI)?

Answer: Ghana is quite fortunate, in that multiple programs overlap there. One of our scholars is being mentored by former Fogarty trainees. Some of the MEPI scholars have come to the Fogarty program. I mentored a scholar from the Global Health Consortium who was also a MEPI scholar. The intersection has been very successful.

Question: You've done good work so far. How do you take it to the next level? How can you keep the momentum going forward? That's very important, especially right now with the stadium collapse in Accra. When you talk about future plans, what do you mean?

Answer: We think we're setting ourselves up for longevity. We have a large and growing number of really great people. I'm very proud of the 100% in-country retention rate. They're very active in their research and continue to collaborate.

Comment: It seems as though many professions have benefited from your training. You've infiltrated disparate sectors in Ghana that could potentially work together in the future. This is quite an accomplishment.

Collaborative Trauma and Injury Research in Bosnia-Herzegovina, Romania, Serbia, and the Gambia

Dr. Corine Peek-Asa, Dr. Nina Jovanovic, and Mr. Edrisa Sanyang delivered a presentation on the University of Iowa International Collaborative Trauma and Injury Research and Training Program.

Discussion

Question: My question concerns the eye injury registry. In Egypt, the occupational injuries go through the health insurance system, and non-occupational eye injuries go through the ministry of health. Are they all going to one place in your country? How did you get this registry?

Answer (Dr. Jovanovic): Our system is somewhat similar to the one in Egypt. Patients with mild injuries will go to the Institute of Work Medicine. Those who are severely injured will be admitted to the hospital. The registry captures data from the severely injured patients.

Question: This question concerns your work in the Gambia. You said that you have two hospitals in your registry and that you have the cooperation of the police. That's very unusual. We've been trying to do this in Egypt for 10 years, but the police will not give us their data. How do you get it? Is it complete?

Answer (Mr. Sanyang): Those are two different activities. We established trauma registries with two hospitals. We're also working with the police to improve their data collection system. That's still just a pilot program, so we don't have full data sets yet. The police have been very cooperative in sharing their data so far; maybe it's because the Gambia is such a small country.

Question: We have difficulty getting surgeons and emergency physicians to complete the data forms. How did you convince them to do it?

Answer (Dr. Peek-Asa): The quality of the data is a challenge in any registry. Because this was supported as a small project, the first thing we did was get doctors in each hospital to take ownership of it. A member of our research staff goes weekly to every hospital to mostly keep them engaged. The traffic data was pretty poor to begin with. To change the traffic reporting form requires approval of the general assembly, and so we met with the general assembly to encourage them to vote to change the form. I don't know when that vote is going to happen, but it seems like it's moving forward.

Question: How do you ensure constant coverage for your trauma registries, and how do you ensure that those admitted directly to the hospital are captured?

Answer (Mr. Sanyang): We built on existing approaches. One of the hospitals found it most effective to use six hospital-employed medical data recorders. The other prefers to use four

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nurses on 8-hour rotations. We carry out regular spot checks on Tuesdays and Fridays. We've been doing this for more than a year now, and the hospitals are as excited and committed as they were at the beginning.

Comment: Eye injuries are an important area of work that has been neglected, and I appreciate your work. It would be interesting to see if there are lessons learned across the board.

Response (Dr. Jovanovic): My hospital is not that big. In 1 month, we enter data from about 30 or 40 severely injured patients in the registry. Two colleagues and I enter the data ourselves. The data require ophthalmology knowledge expertise, so we cannot rely on a nurse or administrator to do it. It will probably be the same in Sarajevo.

Question: Where do you collect data for your burn registry? Is it just in burn units, or do you also collect data on less severe burns?

Answer (Mr. Sanyang): We capture burn data at two levels: our main trauma registry and the WHO burn registry, which we and several other West African countries are piloting. All of the data is captured in the ER.

Answer (Dr. Peek-Asa): One of our projects is looking at carbon monoxide. That may capture burns as well.

Question: Is there a problem in the Gambia with intentional burns? What do you think are the primary causes? Are they cookstove injuries? Is it IPV? Is it child abuse?

Answer (Mr. Sanyang): Our data cannot speak to that issue specifically, although cookstove burns and related issues are still a major problem there.

Question: You mentioned the administrative difficulties you have. Can you share the details on that?

Answer (Dr. Peek-Asa): On the U.S. side, there has been an increasing administrative burden associated with these programs. One of our biggest issues is just trying to send money to other countries. You can no longer do a one-point inter-agency agreement subcontract. You can't give all the money up front. It takes at least 6 months to get that in place in any university. On the other end, we in the U.S. have to find ways to work with very different structures in other countries. We had a partner institution to which we wanted to give funding, but we could almost count on the fact that the money would be redirected as soon as it got there. And then there's the issue that the U.S. won't directly wire money to every country. You have to go through the subsidiary out-of-country banks to get the money there.

Comment (Dr. Peek-Asa): I would like to address the issue of why we moved our program. It wasn't by choice. As we entered into our second round of funding applications, Croatia and Serbia had gross domestic products that made them ineligible. But that economic development was happening in the complete absence of a safety culture in any of the government agencies.

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Fogarty International Center (FIC)
National Institutes of Health (NIH)
U.S. Department of Health and Human Services (HHS)

The lives of the people were not better. Next we moved into Romania and Bosnia. Now they're ineligible. We looked at moving into Macedonia, Albania, and Moldova, but we decided that some countries were struggling so much that our work could not make a sustainable, long-term contribution. That's why we selected the Gambia. We have worked hard to locate that prime situation where you can invest and have the biggest impact but not invest in something that's going to happen anyway. Our biggest impact was in Romania, which is the most developed of all the countries we've worked with. The country is changing very quickly. There's a growth of evidence-based thinking. It's been hard for me to move the Fogarty training out of countries that can still use it so much because they're not considered economically "needy." They're still needy.

Comment: The Fogarty International Center needs to support a lot of countries, and our budget is very limited. We have to follow the World Bank criteria. We realize that more is needed in some of these countries, but we have to abide by our rules. We would love to include every country. If you can find some way to make that work, we would love to hear it. In the meantime, keep pushing to include the countries you feel are important.

Comment (Dr. Peek-Asa): One of the most effective techniques I've learned is meeting face-to-face with the person who can help me. I will go down to their office and look them in the eye and say, "Our goal is to put a team in this hospital in the Gambia. Here's what we need to set it in place." More often than not, they help me find a solution. The human connection is a very important problem-solving tool.

Working Group Reports

(NOTE: This section encapsulates reports from both days of this meeting.)

Group 1: Data Sources

Group 1 was assigned the following goals:

- Identify essential data sources that would enable programs and researchers to identify priorities, gain attention, and obtain resources for traumatic injury prevention.
- Discuss methods for improving data collection.
- Examine strategies to enhance access to data.

The group was asked to describe methods for using data to foster interest and resources for injury prevention research. Dr. Jon Mark Hirshon reported on behalf of the group.

Group 1 noted the importance of considering the context of data sets or data collection. Data can be cleaned or modified. Each setting will present unique data challenges.

The group agreed that the most basic level of data is mortality/fatality. Cause and outcome are also tremendously important. The major challenge is the quality of the data, the credibility of the source, and the ability to access the data. Other data sources discussed included non-fatal injuries, internal security data sources, national disaster response data, police data, and health sector data.

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Fogarty International Center (FIC)
National Institutes of Health (NIH)
U.S. Department of Health and Human Services (HHS)**

Other capabilities discussed included observational studies to look at risk or infrastructure considerations and national surveys or surveys conducted by the U.S. Agency for International Development (USAID), WHO, or other international groups.

There was a desire to look at existing models and potentially look at some of the essential data elements that might be extracted and standardized to be used across countries for flexible use and potential comparison. It would be useful to develop a matrix that would delineate the basic questions and the potential use of those data for policy or public impact. This matrix would outline what type of data, to demonstrate what type of risk, to what audience, and for what impact. To standardized data elements, it would be important to work with those who have existing surveys (e.g., WHO) and international professional groups who specialize in injury and who have the cultural experience to help identify essential elements that are identifiable and translatable across cultures.

The group noted that a fair amount of effort has been expended collecting and analyzing data from high-income countries. It might be worthwhile to develop a method or matrix for lower-income countries. The folks here have incredible experience with trauma registries. We're looking for ways to expand that to identify and improve best practices.

Another consideration is ensuring that data is legitimate. Triangulating data from several sources will enable researchers to cross-check their information and ensure its accuracy.

Group 2: Capacity Building

Group 2 was assigned the following goals:

- Identify key target audiences for injury prevention training.
- Discuss experience and effective training approaches for injury research. Should we train the trainers in order to ensure sustainability?
- Identify priority areas of capacity development in global injury prevention research under limited resources (e.g., pediatrics, road traffic, occupational injuries, violence).
- Identify useful indicators and metrics for capacity development.

Dr. Maged El-Setouhy reported on behalf of the group.

The group identified four primary elements: key target audiences, priority areas, providing reliable data, and sustainability.

Key Target Audiences

Injury prevention is a multifactor process that would benefit from widening the groups of audiences. Audiences should include all those targeted by and would support the prevention program. Audiences fall into four main groups. Academics can design, supervise, implement, and evaluate a program; policymakers from local to national levels represent important allies and collaborators; community representatives should be identified and included; and educators, including school teachers, should be enlisted to aid in data collection and community uptake. The

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main challenges are developing messages and training programs suitable for each target group and convincing these groups to work together.

Priority Areas

Priority areas will be defined according to the most prevalent injuries and issues in a given country or community. Selected priority areas may not be the most prevalent concerns, but a local population may consider them more important. Engaging the local community will improve their acceptance of and participation in research and eventual interventions. This, in turn, will reduce costs.

Developing countries are burdened with many health problems. Prioritizing these problems is governed by the cost and the possibility of success. Consequently, cost-benefit documentation for injury prevention and intervention programs will improve acceptance and cooperation by government decision makers.

Providing Reliable Data

Most, if not all, developing countries have no reliable baseline data or good morbidity data collection. Training programs could introduce medical and paramedical personnel on data collection and management best practices. Injury data is a good place to start. The programs should use qualitative research to determine the best research questions and survey items for quantitative research. These training programs can also provide trainees with guidance as they develop goals and objectives for local and national programs. This will help with data evaluation and dissemination. Training community leaders and decision makers together will create an opportunity for cooperation across sectors. Research training will demonstrate the value of sharing data and the ethical considerations of research. Research is the best way to provide decision makers with compelling evidence-based data.

Sustainability

To be sustainable, training programs must be integrated with other educational programs, including public health and other graduate programs, programs for health care professionals, social programs, and religious programs. Developing shared curricula across programs would enable the inclusion of consistent indicators and evaluation strategies. Training a new generation will keep programs sustainable. Good training and the generation of evidence-based data will encourage the adoption and maintenance of programs.

Group 3: Elements of Success

Group 3 was given the following themes for discussion:

- Build project teams and partnerships that ensure all project needs are met from both a political and skills perspective.
- Identify and enlist key stake holders.
- Define shared goals and responsibilities for the team and project stakeholders.
- Examine elements of successful injury prevention research programs, including pediatric injury prevention.

Dr. Mock and Dr. Peek-Asa reported on behalf of the group. Group 3 identified many elements and actions that can improve or define a program's success.

To be successful, a program will do as follows:

- Capitalize on human resources and keep them in the country.
- Stay aggressively neutral and be clear that no one owns you. Stay focused on shared goals, and present your case with supporting evidence. Build trust with a long-term focus.
- Start with the end in mind and never lose sight of the goal.
- Start with needs assessments to be sure that the community and stakeholders are on board with intended research.
- Identify who has done what and where current efforts fit within the larger community and evidence base.
- Hire a cultural consultant to ensure that the communication and work are culturally competent.
- Build practical skills and provide support in country. Trainees often work in isolation and don't have partners to ask for help or to share work.
- Find a broad group of mentors and colleagues for feedback.
- Bring stakeholders into the process early so they are engaged and invested.
- Invest in young students and integrate research early into the teaching process.
- Make sure to build relationships by understanding the goals/mission of the stakeholders. Don't assume that they will want to support what you are doing just because you are interested in the topic.
- Be ready for leadership changes. It helps to identify champions at lower levels of upper leadership so there can be some stability in institutional and political relationships over time. One way to do this is to ask a minister or other leader to appoint a contact person for you.
- Prioritize capacity building and implementation science.
- Establish clear plans for communication, decision making, roles, and responsibilities. Training in these methods would be helpful for fellows.

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Fogarty International Center (FIC)
National Institutes of Health (NIH)
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- Take time to understand the environment and local politics of the agencies and community in the region where you intend to work. This will help you align with their needs.
- Recognize that not all potential stakeholders will be supportive. Engagement may not change their mind, but it may convince them to leave you alone to do your work.
- Consider sustainability from the outset.
- Identify and nurture relationships with champions throughout the process.
- Pitch ideas with the support of economic and business data and arguments.
- Build implementation and leadership skills into the training process.

Group 3 determined that each stage of the training program process has its own opportunities for improvement.

In the planning phase, program leaders and trainees should do as follows:

- Identify and engage practitioners and stakeholders.
- Ensure that the project is needed and that a clear vision of how the project fits into the current evidence base is articulated. This should include an environmental scan and a complete literature review.
- Explore funding options for the topic for both current plans and next steps.
- Complete an inventory of the skills needed to complete the project and identify who needs to be on the team to complete these tasks.
- Create a mentoring plan.
- Ensure buy-in from a trainee's supervisors. Be certain that they support the concept and will provide the needed protected time.
- List the documents, assurances, and approvals needed, and create a timeline for getting this done.
- From the outset, be sure that the research question is measurable, feasible, and of appropriate scope for the time and resources available. Make sure to consider the time it takes to do all this.
- Consider the ethical issues and address any concerns.
- Discuss and set expectations for intellectual property, ownership, and authorship.
- Discuss potential challenges and create multiple backup plans. Assume that there will be challenges.
- Develop a dissemination plan to deliver eventual findings into the hands of stakeholders.
- Keep long-term goals in mind.

During the operational phase of the program, program leaders and trainees should do as follows:

- Implement all of the plans listed above, keeping original goals in mind.

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- Seek and listen to input in order to avoid making the same mistake with increasing confidence.
- Pilot test and revise various elements.
- Stay on top of things. Mind the timeline.
- Identify people who can help and reach out to them.

During the dissemination phase, program leaders and trainees should do as follows:

- Find writing support and get reviews of a manuscript.
- Don't disseminate anything until the story is conceptualized and the methods for communication are clear.
- Practice. Encourage practice questions and prepare responses.
- Review the dissemination plan to identify audiences and key members of each audience.
- Be mindful of the message and how stakeholders receive it. Provide information aligned with their goals and mission.
- Think through and be ready to communicate policy and prevention implications.
- Be creative with dissemination tools: Video, infographics, and social media are all more accessible ways of reaching your audience.

The group acknowledged that all of these steps are time consuming on the front end of any program or project, but argued that putting the work in ahead of time will enable a much smoother execution and dissemination of research down the road.