Eunice Kennedy Shriver **National Institute of Child Health and Human Development (NICHD)**
Fogarty International Center (FIC)
National Institutes of Health (NIH)
U.S. Department of Health and Human Services (HHS)

Global Trauma Prevention Expert Consultation: Day 2 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: Alan Guttmacher

Dr. Guttmacher welcomed participants back to the meeting. He said that research is the focus at NICHD and NIH but that the institutes believe that research is most useful when it provides answers to questions about health and well-being. He stressed the importance of making research findings accessible to other researchers, practitioners, and policymakers so that people's lives can be improved.

Dr. Guttmacher said that child health and injury research is an essential part of NICHD's portfolio. NICHD funds many different kinds of domestic and international injury and injury prevention research, including research on critical care and the causes and prevention of motor vehicle injuries, household falls, home air pollution, cookstove burns, drowning, and violence in all forms. Dr. Guttmacher said that NICHD values injury prevention research work and looks forward to supporting it further. He said that NICHD strongly encourages investigator-initiated research, and he encouraged program participants to talk to program officers about NIH research and training opportunities.

Dr. Guttmacher thanked the meeting organizers and participants for their work before and during the meeting, as well as their work the rest of the year.

Injury Prevention Research Training in Egypt and the Middle East

Dr. Jon Mark Hirshon, Dr. Maged El-Setouhy, and Dr. Mohamed El-Shinawi delivered a presentation on the collaboration between the University of Maryland, Baltimore, and several Egyptian institutions.

Discussion

Question: All of our programs support small research projects. How do you prepare your mentors to mentor? What are your elements to make those small projects successful?

Answer (Dr. Hirshon): We've trained a lot of people, and some have been more successful than others. Part of that is due to societal instability. Many people who were initially trained left after

the revolution. In-country mentoring is very important. Everyone needs someone local who will keep them on track. In addition, it's important to decrease administrative barriers. We already know how many barriers there are to research. Elements of success for us include getting very organized, making sure trainees have support, and selecting people who are already on a path that aligns with ours. Our trainees have to have completed something like the STEPS course in advance. That helps us pick people who will be most successful.

Answer (Dr. El-Shinawi): Any person coming to the U.S. needs to get a letter of support from their supervisors. We had a lot of people who had to drop out of our online course early on because they didn't have support.

Question: How do you evaluate how trainees are internalizing your lessons? Do you do follow-up to learn how and where they apply what they've learned?

Answer (Dr. Hirshon): We keep in touch with most of them, especially for the first few years after they've completed the program. We know most of their mentors and where they are. It's a country of 84 million people, but when I started, there was less than a handful of injury researchers. We all know each other.

Question: How do you measure outcomes from the STEPS course? How does it change mortality rates and survival for your patients?

Answer (Dr. Hirshon): Getting outcome measures is hard. We've designed studies to try to do that, but you have to do it in a place where you can implement the course in a quasi-experimental fashion. We got the attention of policymakers by making it mandatory for the Egyptian Board of Emergency Medicine. It's in process of being approved by the medical syndicate. We've had a policy-level impact, and we've got a lot of great stories so far about how the people who took the course were able to change regional trauma policies.

Question: I'm interested in knowing more about long-term trainees. They spend part of the time here in the U.S. In those 3 months, what additional training do they get? And moving forward, do you think part of that can be taken over in country? What are the components that need to be done here that can't be done in Egypt?

Answer (Dr. Hirshon): We're building capacity there, but at least part of the program is trying to take people out of their environment to give them the opportunity to focus strictly on research. What we do here is similar to the online course, but more in depth. We get them hands-on experience in biostatistics. We teach them things like how to do a brief biography, a budget, and a proposal. They develop their mentor projects, so they can go back and do them in Egypt. It would be nice to do it in country, but in a way we want to take them out and show them a different landscape. I'm not sure I want to take away the U.S. component. That's part of the reward, if you will, of being part of the program.

Answer (Dr. El-Shinawi): Additionally, when the trainees do ER rotations, they can observe triage and other practical skills. They understand it when they see it with their own eyes, and then they can bring it back to Egypt.

Answer (Dr. El-Setouhy): The research environment is totally different here. We are trying to put them in a situation that allows them to be just researchers. In Egypt, they have never been and will never be exposed to budget concerns. There is no reason to discuss it. By preparing them early, we can help them write successful grants for other projects.

Answer (Dr. Hirshon): We also teach a lot of intense research ethics. It really gives them a better understanding of the importance.

Question: How does the research done in the program fall on the spectrum of primary-secondary-tertiary prevention?

Answer (Dr. Hirshon): We're looking at injury prevention and response, so most of our publications relate to primary prevention, but not all. One publication looks at occupational injuries and the impact of occupational injuries on quality of life 6 months later. We tend to focus on the younger generation to try to make a difference. If you teach the young, they can influence their parents.

Question: We often think about bi-national programs as unidirectional. What have you learned from this process?

Answer (Dr. Hirshon): First, it's about relationships. In Egypt, success is often about who you know and how you develop those relationships over time. I also learned that one size does not fit all in research. We can talk about physical changes to the road to decrease speed, but that may look different in different countries and regions. There are a lot of commonalities, but we're still learning how we can individualize medicine for each country.

Question: When your students come for the long courses in the summer, are they alone as a cohort, or are they embedded with other trainees?

Answer (Dr. Hirshon): The students are pretty much individuals, but there are some group activities.

Question: It seems like you do both research and clinical training. What proportion of the training is research?

Answer (Dr. Hirshon): The numbers are higher on the clinical side, but the bulk of effort and time and money toward the research side.

Question: Developing champions requires input and a deliberate process. Can you elaborate on how you do that?

Answer (Dr. Hirshon): That's something we need to work on. We've got great collaborations with senior people in the ministry of health and the military, but I'm not sure we've had much discussion about how to take trainees.

Answer (Dr. El-Setouhy): All of the trainees who came to us from universities are in better positions after the program. Most of their colleagues in Egypt have not had this opportunity to be exposed to research training. This makes it easier for them to be promoted to higher positions. Mohamed started with the 6-month course. Now he is getting projects from the NIH and other funding agencies. He has become a leader.

Answer (Dr. El-Shinawi): I learned the importance of research when I came here for the first time in 2007. It was important to have this opportunity in order to help others.

Comment: We talk a lot about what the countries we work with have learned from us, but we don't talk a lot about what we've learned from them. If we say a program is culturally sensitive or congruent, we need to do more to connect with local culture. We need to make it more explicit. Currently, we give a very unbalanced approach to where the learning really is.

Comment (Dr. El-Setouhy): We tailored the STEPS course for Egyptians and others in developing countries where the education may not be as competitive. Jon was very flexible to start with what we need to do here, where we are now, and where we'd like to go. This was a very good exercise for all of us.

Question: Tell us about your experience obtaining surveillance data on severe trauma. You mentioned data collection on pediatric and adolescent poisoning. How did you get and use that information?

Answer (Dr. Hirshon): The hardest thing to do is to get good data. We look for opportunities. We were lucky to have a trainee in the poison control center who had access to the data. As a result, we were able to access that data. We're now in the process of analyzing it. Data related to the overall country can be a challenge.

Answer (Dr. El-Setouhy): All universities have to have accreditation, and to get accreditation you have to have data collection that's good for the hospitals. We'll soon have a data registry at Ain Shams University. This will encourage other universities to do the same. It took a long time for the Egyptians, especially in the ministry of health, to understand the value of data.

Question: Is there a pediatric component to STEPS training?

Answer (Dr. Hirshon): There is, but we can also create modules. If we want to emphasize a specific area, we can. We have a pediatric component and can make it more robust as necessary.

Question: Your grant is coming to an end. Do you think this kind of injury research training program is still needed in Egypt? If so, how will you move forward? What are your thoughts on the program and how will you take advantage of your investment to take it to the next level?

Answer (Dr. Hirshon): We've started conversations. This meeting has given us a lot of food for thought as we hear about our colleagues' successes and challenges. One thing I've learned from this meeting is that I need to follow up with all our trainees to find out where they are and connect them. That way we'll be able to continue this conversation as they move up the ranks. I'd like to make sure that our research trainees continue to do research. I'd like to take those successes and help them continue to grow so they can help us bring up the next generation. Training trainers for STEPS was easy. Training trainers for research will be a little more of a challenge.

Answer (Dr. El-Setouhy): Working in other countries will be very helpful. We are starting to gather our students. We talked about maybe engaging a non-governmental organization or something to bring these graduates together. When we have them together, we will have a small institute that can teach research and will enable research to go forward.

Answer (Dr. El-Shinawi): When we started in 2006, there was an antipathy and lack of understanding for research. Now there is a generation of surgeons trained in emergency medicine. They are eager to teach, to learn, and to do responsible research. Interest is growing.

Question: You mentioned pulling in other disciplines. How successful have you been in pulling in medical examiners, law enforcement, traffic engineers, and civic engineers to learn injury prevention? How are you doing that?

Answer (Dr. Hirshon): Police crash reports follow patients to the hospital in Sudan. That's an incredibly rich data source. One challenge is that in that region, with few exceptions, medicine is taught in English, but the police speak the local language. So my ability to communicate there can be limited.

Answer (Dr. El-Setouhy): We've started multidisciplinary committees that bring together representatives from the ministries of health, transport, and the interior. They've begun coming to us as experts on road traffic injury.

Panel Discussion on the Current Status of and Opportunities for Global Injury Prevention Research:

Panel Members: Alison Cernich, Arlene Greenspan, Ralph Hingson, Troy Jacobs, Valerie Maholmes, and Margie Peden

Each panel member delivered a brief presentation on the opportunities for global injury prevention research available through their institutions.

Dr. Maholmes provided an overview of the NICHD Pediatric Trauma and Critical Illness Branch. She shared information on NIH and NICHD research spending, as well as the success rates of grant applications. She related NICHD's mission: to ensure that every person is born healthy and

wanted, that women suffer no harmful effects from reproductive processes, and that all children have the chance to achieve their full potential for healthy and productive lives, free from disease or disability, and to ensure the health, productivity, independence, and well-being of all people through optimal rehabilitation. Dr. Maholmes emphasized the breadth of the mission, which she said can provide a home for many types of injury research.

Dr. Maholmes concluded by saying that NICHD will continue to build and invest in the field of injury research by using all available projects and funding mechanisms. She highlighted an FOA for the NICHD Consortium for Research on Pediatric Trauma and Injury Prevention. She encouraged meeting participants to contact her for more information.

Dr. Cernich summarized the work of the National Center for Medical Rehabilitation Research (NCMRR). She described the bilateral relationship between injury and disability and said that the Center funds research into secondary injury prevention and the use and adaptation medical devices, especially in LMIC. She exhorted meeting participants to consider incorporating secondary injury prevention research into their work.

Dr. Hingson said that the National Institute on Alcohol Abuse and Alcoholism (NIAAA) funds about 200 projects a year and that the institute is undergoing a strategic planning process. He noted the well-established relationship between alcohol use and injury, particularly road traffic injuries. He said that about half of NIAAA's research funding goes toward research into underage and college-age drinking. The institute supports policy research, as well as research into screening and brief intervention.

Dr. Jacobs said that in the context of his work with USAID, injury is a clinical and national development concern. He said that USAID's work is driven by three primary objectives: ending preventable child and maternal deaths, enabling an AIDS-free generation, and addressing emerging threats and infectious diseases.

Dr. Jacobs said that USAID's Maternal and Child Health Branch spends $5 million to $10 million on research each year, primarily on 24 priority countries. He said that the interest in and demand for injury research is rising and that USAID hopes to address that demand. He said that USAID's work includes implementation research, often at the primary health care or community level.

Dr. Peden noted that the WHO is neither a research agency nor a funding agency; instead, their work is to convince policymakers to take up good practices. She listed seven research-related gaps that the WHO has encountered in communicating with politicians:

- **Improved injury death data:** The WHO receives death data from 119 countries. Of those, only 34 provide complete data. There are 74 countries that produce no death data, send no death data, or lack death certification altogether.
- **Data on nonfatal injuries:** Data and data collection models for nonfatal injuries are insufficient.
- **Building capacity in service of implementation:** Capacity building currently focuses on academia and ministries of health, not implementation.

- **Global priorities in injury research:** Falls and burns represent substantial burdens around the world but have not been subjects of research concern.
- **Violence prevention:** Violence data frequently relies on estimation, which is not a sufficiently good source for creating effective interventions.
- **Diversifying funding sources:** At present, there are very few consistent funding sources for injury research, and those sources are tightening their budgets.
- **Disseminating information to wide audiences:** Researchers should move beyond journal publications to address conference audiences and the media.

Dr. Greenspan offered a brief overview from a Centers for Disease Control and Prevention (CDC) perspective. She noted that the CDC budget is mostly restricted to domestic research. One notable exception is the CDC Center for Global Research. This center works with local ministries of health to provide LMIC with nationally representative surveys of children in order to ascertain incidence rates of various conditions, as well as risk factors for physical and sexual violence. In addition, CDC has identified road traffic injury as an area of global health concern. Dr. Greenspan noted that the Center for Global Health is focused mainly on infectious disease and that injury has not yet become a priority. She said that she believes that a critical mass of global researchers and global public health practitioners will create a change. In the meantime, she suggested focusing new funding on areas of existing research in order to maximize investment. Dr. Maholmes supported this suggestion.

Dr. Hingson described an interagency committee that meets monthly to address underage drinking. He suggested considering this model in order to increase attention to global injury research. Dr. Maholmes said that she and her colleagues have participated in such groups. Rather than creating a new group, she suggested investigating the priorities of existing groups to determine whether there is any potential overlap with injury research.

Dr. Peek-Asa asked how researchers and program leaders can influence special calls and special topics from funding agencies like NIH. She asked whether interagency committees could create targeted calls for global research proposals. Dr. Maholmes explained that special calls are informed by the field, particularly meetings, publications, and progress reports.

Dr. Mock asked how investigators can present their implementation research in a way that makes it appealing to NIH. Dr. Cernich said that small-business-initiated research is a common avenue for injury prevention, medical device, and rehabilitation research. She said that NCMRR has begun forming partnerships, including an interagency committee for disability and rehabilitation research. She said that several participating agencies have international programs that can support global grants, and it is often a matter of finding a solicitation that fits the proposed research. Dr. Hingson added that global research proposals become more appealing to NIH when they indicate potential benefits to the health of Americans.

Dr. Cheryl Anne Boyce, National Institute of Drug Abuse (NIDA), offered to send the meeting participants some examples of grant proposals that have skillfully addressed the NIH mission. She said that she would also send the meeting participants contact information for NIDA's

international program officers. She encouraged researchers to make contact with program officers, who can help them craft appealing proposals.

Dr. Hirshon said that Dr. El-Setouhy has been working with the substance abuse research center at Jazan University, which has a restrictive funding mechanism. He asked what type of mechanism would allow researchers to build partnerships with high-income countries and then broaden them to reach nearby countries with more critical needs. Dr. Jacobs said that USAID has faced similar barriers, but it is possible to use collaborations and alliances to bring resource partners together.

Dr. Razzak asked what agencies like the WHO can offer trainees beyond funding. Dr. Peden said that the WHO accepts unpaid interns for up to 6 months in Geneva and some regional offices, including one in Washington, D.C.

Discussion: The Future of Global Injury Prevention Research and Training

Dr. Razak said that FIC will continue to provide opportunities for global injury research training. He asked the following questions:

- How can we advocate for injury research?
- How can we support implementation?
- How do you see the next 5 years?
- How can FIC best support you?

Dr. Mock observed that implementation is an area of weakness for him and his fellow researchers. Dr. Peek-Asa agreed. She put forth the idea of multisite implementation studies but acknowledged that finding funding sources for such studies could be challenging. She said that at present, global injury prevention training programs are not coordinating and collaborating as well as they could. Dr. Peek-Asa said that there are many opportunities for training programs to work together to improve both efficiency and outcomes.

Dr. Razzak offered the concept of a global network for injury research. He said that training programs need to interact to define common protocols. Dr. Greenspan noted that implementation needs will vary by region and by country.

Dr. Hirshon said that he imagined a hub-and-spoke pattern similar to those currently in use by some emergency medicine networks. He recognized that such a network would require infrastructure and support to create. At present, he said, the training programs' greatest assets are the relationships they've forged.

Dr. Wyatt pointed out that the meeting participants have already formed a community of sorts, and she encouraged the group to continue to develop their network. She suggested that training programs document their work in manuals so that it can be reproduced elsewhere. Dr. El-Shinawi agreed. He said that there was a need for communication between programs. Dr. El-Setouhy suggested an online forum. He supported Dr. Wyatt's idea for training manuals.

Dr. Peden reintroduced the idea of a pre-meeting before the 12th World Conference on Injury Prevention and Safety Promotion in 2016.

Dr. Razak said that a network would be a good next step. He said that sharing information could be complicated, as each training program owns its information and the protocols that it has developed. He said that he would send the meeting participants more information on FIC's k43 mechanisms for LMIC research career development.

Dr. Maholmes asked the group how many people would be interested in online conversations. She then asked which national meetings the researchers regularly attend, explaining that meetings can be a way for grantees to interact with researchers from outside their subfields.

Dr. Stephen Hargarten said that he attends the World Conference on Injury Prevention and Safety Promotion and the Consortium of Universities for Global Health. Dr. Hingson recommended that injury researchers attend meetings of the Community Anti-Drug Coalition of America, which works to address substance use and its related problems. He said that the organization's interests overlap with those of injury researchers and that they are in the process of developing international programs. He also recommended that researchers engage with the International Council on Alcohol, Drugs, and Traffic Safety. Dr. Peek-Asa recommended the Society for the Advancement of Violence and Injury Research.

Dr. Richmond seconded Dr. Hirshon's concept of a hub-and-spoke network. She noted that the spokes could represent either centers and training programs or specific issues like violence and road traffic injuries.

Dr. Razak asked the trainees present for their thoughts on the future. Dr. Jovanovic emphasized the need for long-term follow-up and mentorship, even after trainees have left the program. Dr. van der Westhuizen concurred and added that she would appreciate learning how to become a mentor. Dr. Mehmood said that it is important to continue to sustain training programs beyond the initial investment in order to provide the most fruitful atmosphere for capacity building. Dr. Calgua Guerra expressed interest in and enthusiasm for NIH's career development grants. He said that collaboration between institutions is essential, as is long-term mentorship. Mr. Sanyang said that it is important for programs in LMIC to champion the power of data and make injury research a priority. Dr. El-Shinawi supported the concept of a network. He suggested that the group apply jointly for grants to develop the network infrastructure. He also agreed that long-term mentorship is important. Dr. Martinez Siekavizza said that the program has already made a significant impact in Guatemala and that the community of researchers has grown.

Dr. Mehmood asked what kind of training programs FIC intends to support over the next 5 years. Dr. Razak said that advanced degree training and leadership development are important, but it is up to applicants to determine what kinds of training are needed.

Dr. Razzak concurred with the need for long-term mentorship, especially in country. He said that isolation is a big problem for researchers in LMIC. He also said that it is very important to

support and engage mentors in LMIC, as they are under a great deal of pressure from mentees who all want badly to succeed. He said that support for trainees should not stop once they become leaders in their own countries. Dr. Richmond agreed. She said that trainees are well equipped with research skills but should be better supported as they learn to become leaders.

Dr. Hirshon suggested an advanced course for trainees, in which former scholars could learn the practical skills expected of leaders in international research. Dr. Richmond noted that these skills are not unique to injury research, and she suggested reaching out to other research networks to collaborate on trainings.

Dr. Mock said that doctoral-level training is not always what's wanted or needed in LMIC. He said that local partners in Ghana were interested in sending their staff, who had bachelor's degrees, for extra training.

Dr. Razzak said that money invested in research training in LMIC has a high rate of return, since it is much more expensive to train researchers in the United States. He agreed that training programs should share coursework and resources to broaden offerings to trainees and maximize efficiency.

In closing, Dr. Razak said that the future of injury prevention research and training is bright and that the next steps will involve enhancing the network, focusing on implementation, and sharing information. He said that FIC will continue to collaborate with other funding agencies and that he will send out information about the FOA as soon as it is published.