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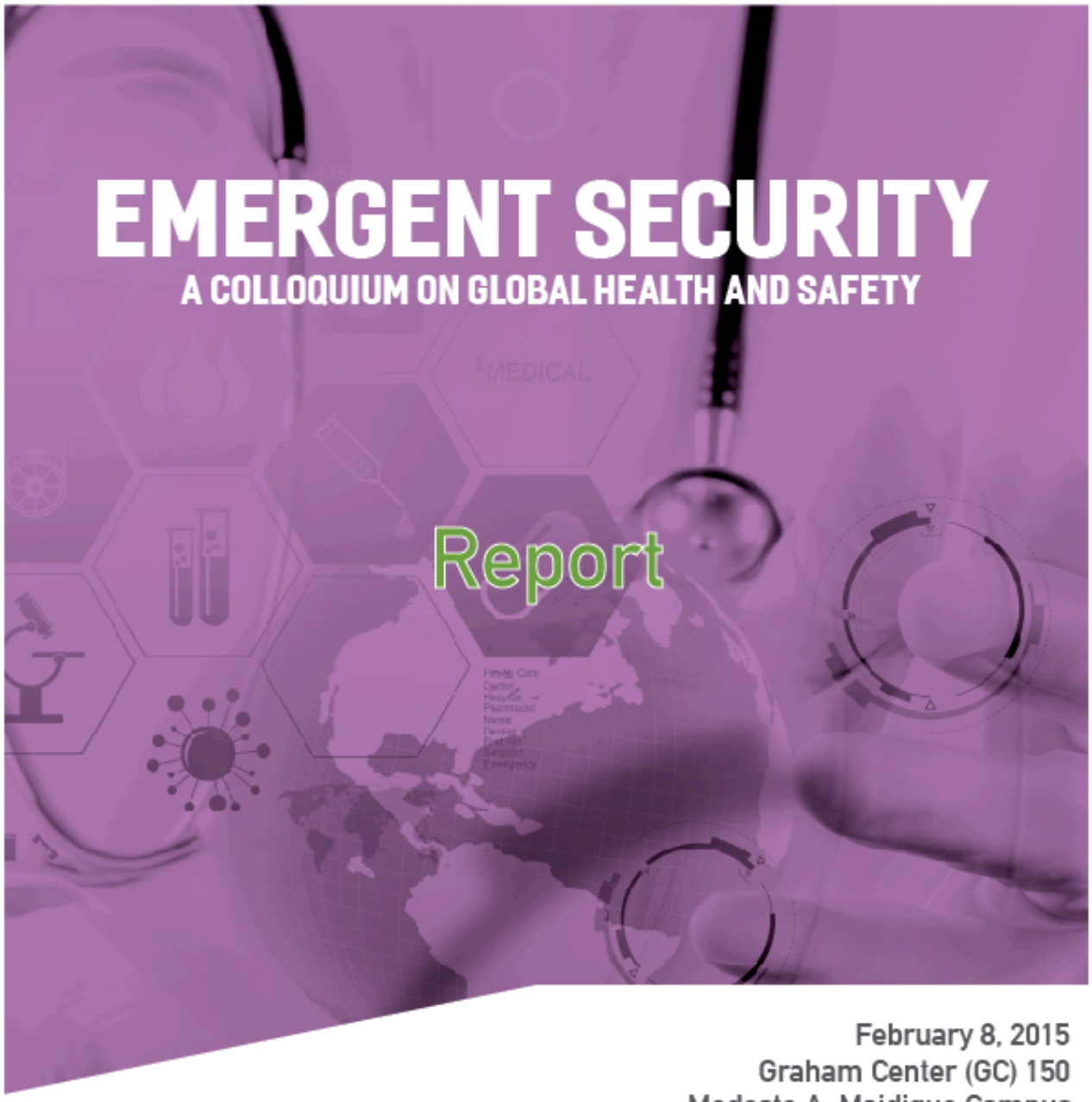

EMERGENT SECURITY

A COLLOQUIUM ON GLOBAL HEALTH AND SAFETY

Report

February 8, 2015
Graham Center (GC) 150
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Health Security

Health security is a very broad term that affects not just the population locally, but across the globe. With the current ease of travel and information exchange, any form of threat can become viral. The three topics discussed are health and state security, antimicrobial resistance, and human health and security in a time of migration. Antimicrobial resistance (AMR) is an urgent problem that has become a safety and security concern. The ominous surging trends in AMR pathogens is epidemic in proportions, and if not curbed, would leave global the population vulnerable to even the simplest of infections. The Center for Disease Control and Prevention (CDC) estimates more than two million people are infected with antibiotic-resistant organisms, resulting in approximately 23,000 deaths annually. Drug-resistant infections kill about 10 million people across the globe. These infections threaten to become the leading cause of mortality by 2050, costing around $100 trillion in lost output. There is a critical need to develop cost-effective and time-sensitive surveillance programs for the emergence of AMR, and the prescription and utilization of existing (and incoming) antibiotics. With increasing resistance, antibiotics are becoming a nonrenewable resource.

Migration and displaced populations contribute to the spread of epidemics especially when adequate health systems are not accessible or provided. These displaced populations can come from civil war, natural disasters, and migration due to political systems that leave youth with unmet aspirations and little hope. The migrating populations can bring with them not only their culture and customs, but also diseases and infections that can be disseminated. Infections can also travel along with migrants and military and easily imported into any countries. It is in these movements where disease outbreaks unattended by different socioeconomic circumstances, are affecting all social strata without any restraint.

The Global Health Consortium at Florida International University (FIU) organized a colloquium on February 8th, 2016. This colloquium was to address the human and state security issues created by health challenges in a world of political and economic instability.

The objectives of the colloquium were to:

- Discuss and evaluate gaps in global health security.
- Narrowing gaps in global health, including recent threats such as Zika and Ebola epidemics.
- Evaluate the current situation of Antimicrobial resistance in Latin America
- Explore underlying conditions that lead to health crises and potential solutions.

Agenda

Emergent Security Colloquium: Global Health and Safety	
Introduction and Opening Remarks	Frank Mora (Chair)
Perspectives on Health Security in the Americas	Col. Cachuela
Antimicrobial Resistance: Role in Patient Outcomes and Health Security	María Virginia Villegas
Foster Migration and Impact on Health	Roberto Savio
Questions and Answers and Panel Discussion and Closing remarks	Carlos Espinal

Moderator

Frank O. Mora, PhD
Director, Kimberly Green Latin America and Caribbean Center
Florida International University

Frank Mora is Director of the Kimberly Green Latin American and Caribbean Center and Professor in the Department of Politics & International Relations in the Steven J. Green School of Public and International Affairs at Florida International University. Prior to arriving at FIU, Dr. Mora served as Deputy Assistant Secretary of Defense for the Western Hemisphere from 2009-2013. He has held several teaching positions, including Professor of National Security Strategy and Latin American Studies at the National War College, National Defense University, and Associate Professor and Chair in the Department of International Studies, Rhodes College.

Opening Remarks

Dr. Frank Mora, Director of the Kimberly Green Latin America and Caribbean Center (KGLACC) opened the colloquium with welcoming remarks. Dr. Mora explained that the center is an important partner in the Global Health Consortium, as an interdisciplinary center committed to scholarship in the region. The U.S. Department of Education for study and outreach in Latin America and the Caribbean designates KGLACC as a national resource center. Dr. Mora emphasized that the center is looking for ways to expand its collaboration with the Global Health Consortium. Dr. Mora served as moderator during the colloquium.

Speakers

Colonel Rudolph Cachuela, MD Command Surgeon
US Southern Command-SOUTHCOM

Command Surgeon Cachuela works to enhance SOUTHCOM's ability to respond to health crises within the Area of Responsibility, while working with partner nations to achieve a similar goal for their medical personnel. As Command Surgeon for U.S. Southern Command, he is responsible for overseeing and planning health care engagement and health services support for the entire SOUTHCOM area of support, which includes everything south of Mexico and the Caribbean.

Maria Virginia Villegas, MD Executive Director
International Center for Training and Medical Investigation (CIDEIM), Colombia

Dr. Villegas is Executive Director of CIDEIM, and leads the bacterial resistance thematic area, whose work focuses on the study of mechanisms of resistance to antibiotics acquired by Gram-negative bacteria. Together with the area group, she has established and coordinated a successful national network of more than 20 hospitals for the study and control of bacterial resistance in Colombia. She also acts as consultant to infection committees of various hospitals, which determine infection control and antibiotic use policies in Colombia.

Robert Savio, PhD Founder
Inter Press Service (IPS) News Agency, Italy

Roberto Savio is an internationally renowned expert in communications issues. He has founded numerous news and information projects, always with an emphasis on the developing world: Inter Press Service (IPS) news agency, the pioneering Technological Information Pilot System (TIPS), the network of national information systems for Latin America and the Caribbean (ASIN), the Latin American features service ALASEI, and the Women's Feature Service. He is now IPS President Emeritus.

Carlos Espinal, MD, MPH
Director Global Health Consortium, Florida International University

Dr. Espinal is director of GHC and a renowned expert on tropical and emerging diseases. Espinal has worked as the Director of Public Health, Immunization Policy and Advocacy in Latin America at Sanofi Pasteur where he worked along the Pan American Health Organization (PAHO) to help increase use of specific vaccines in Latin America and improve the surveillance systems on dengue and other infectious and tropical diseases.

Presentation Summaries

Perspectives on Health (and) Security in the Americas by Colonel Cachuela

Colonel Cachuela explained the mission of SOUTHCOM in its area of responsibility, which comprises the entire western hemisphere south of Mexico. His role is to apply health and health engagement to support security in the region, and identify where and how health place a role in the security strategy priorities for the region. He emphasized the importance of Latin America for United States security because of economic, political, geographic, and importantly, cultural ties. SOUTHCOM works with interagency partners, including the Federal Bureau of Investigation, Drug Enforcement Agency, and others through a joint task force (JTF Bravo) to provide a strategy and vision for stability and security in the region. The taskforce conducts and supports joint operations to address the biggest regional threats to security: transnational criminal organizations, health, natural and manmade disasters, mass migration, global events where many Americans could congregate (e.g. Rio de Janeiro Olympics), defense of strategic locations (e.g. Panama Canal), etc. This requires training and operations on counter narcotics, counter terrorism, partner nation capacity, planning for contingencies and detainee operations.

"Health Secutiry is key component in regional security, and health care is a critical component of national stability"

Health security is key component in regional security, and health care is a critical component of national stability. Disenfranchised people are targets for organized crime and vulnerable to abuse and displacement. Ultimately, the goal is to support the region to be strong and self-reliant with adequate health and education systems that make it possible to have national stability. The United States Global Health Security Agenda aims to work with other nations, international organizations and public and private stakeholders to accelerate progress toward a world that is safe and secure from infectious disease threats and to promote global health security as an international security priority. Transnational criminal organizations constantly change illicit drug trafficking routes. For example, 90% of cocaine entering Mexico transits through Guatemala, 80% of illicit drugs are seized in Central America and 20% seized in the Caribbean. The drug trade increases homicide rates within the communities in its route. The economic and social impact of transnational criminal organizations (TCO) is immense, costing $220 billion. One of the priorities of SOUTHCOM is to build self-sustaining capacity in partner nations in terms of finances, organizational structure, personnel, and security structures. Although most assistance consists of military-to-military exchanges, there is also military to ministry of health collaboration on a lesser scale.

Compared to a few decades ago, the southern region has enjoyed relative security and stability, which has led to the current regional security strategy (2015). Global health has gained importance on this security agenda, ranging from infectious disease to biological response plans. Infectious disease outbreaks can be devastatingly destabilizing for a region, such as the case of Ebola in West Africa, which affected the social, political and economic stability of the region. Nations are still recovering from the impact of the outbreak. A current concern is the spread of Zika virus in Brazil and through the hemisphere. From the military and internal defense perspective, health is a critical component of maintaining a force. Partner nation military is heavily involved in disaster relief and there is a need to ensure that they have the capability and adequate assistance.

The health security priorities are currently to plan for contingencies, build partner national medical capacity, internal defense, and security forces; prevention of pandemic influenza and other infectious diseases (PIID); detection and response to disease outbreaks; as well as promoting peace, security and health.

Questions & Answers

Q: How does SOUTHCOM determine the priorities for the partners?
A: We prioritize based on countries' priorities and what the U.S. sees as priorities for partner countries.

Q: How, if at all, does SOUTHCOM collaborate with PAHO (Pan-American Health Organization) and the U.S. CDC (Centers for Disease Control and Prevention)?
A: We work closely with CDC CAR in Guatemala through as interagency US government approach. PAHO is very important partner to synchronize our plans. For example, in Belize we are planning big engagement in 2017 for training and health care delivery. We recently met with them to see what they are doing to take a whole-of-society approach.

Q: Is there a possibility to engage with non-governmental organization in countries with problematic governments, such as Venezuela?
A: In area of health care, the only way to engage with Venezuela is through PAHO. We have no ability to work with NGOs in Venezuela. This is a challenge for coordinated collaboration through the Department of Defense.

Q: How can universities like FIU help your mission?
A: You have the cultures and language of the region right here and the expertise. You can reach out to institutions in partner nations to build capability and capacity. For example – there are frequent requests for assistance in telemedicine. (E.g. Belize does not have an oncologist). Another way would be to help a partner national developing a national health strategy, health policy.

Antimicrobial Resistance: Role in Patient Outcomes and Health Security by Dr. Villegas

Dr. Villegas' presentation focused on how to move antibiotic stewardship from theory to practice. There are several factors to consider in order optimizing the clinical outcome, while minimizing the undesirable effects of using antibiotics. Antimicrobial stewardship requires finding the balance of adequate treatment while limiting toxicity, and reducing the cost of treatment without compromising quality. Antimicrobial stewardship should be an integral part of infection control. Often there is a "bad match" between the prescribed antibiotic that did not address the right bacteria, or the bacteria was resistant to the particular antibiotic. It is proven that inappropriate antimicrobial therapy results when antibiotic treatment is prescribed before getting results from a laboratory culture. Moreover, it is proven that this increases patient mortality. Research shows that empirical prescription with the wrong antibiotic followed by culture and sensitivity adjustments did not reduce the mortality rates when compared with the prescription of the right antibiotic in the first place. In other words, it is better to wait for culture results before prescribing antibiotics.

"Prescribing doctors need to know the epidemiology of the most common types of bacteria and the susceptibility of those bacteria to specific antibiotics"

Prescribing doctors need to know the epidemiology of the most common types of bacteria and the susceptibility of those bacteria to specific antibiotics. Doctors typically do not know these data, and they end up using same antibiotic they have always used. The mechanisms of resistance for bacteria may be very different in different regions (e.g. e.coli). Prescribers should understand the selective pressure, i.e. the possibility of the bacteria becoming resistant, and be able to stratify infections and risk factors.

The take-away is that you can make an impact in your hospital when you follow a clinical pathway, implement antibiotic guidelines and convince people that antimicrobial stewardship works. Nicolau (2011) showed that antimicrobial stewardship policies decrease antibiotic use and cost to hospitals. An antimicrobial stewardship program resulted in a decrease in antimicrobial use by 22-36% and associated savings of as much as 900,000 for first year. Koleff (2013) found in a 2013 study that once a patient is stable and the culture results are in, it is important to use narrow scope antibiotic. Hospitals need to be able to identify outbreaks, and be familiar with the epidemiology, microbiology, and molecular characterizations in order to develop guidance regarding which antibiotics to prescribe for different infections.

Changing prescription habits is a huge challenge for doctors, who often do not have access to a microbiology lab. This requires sound prescription guidelines in hospitals, tracking outcomes and measuring impact of prescription policies. World Health Organization network (WHONET) is a tool to analyze data at a hospital, tracing trends over time. CIDEIM (International Center for Medical Training and Research) is an autonomous entity within the Colombian National System of Science, Technology and Innovation that facilitates biomedical research on transmissible diseases. Their multidisciplinary team develops solutions to health problems and builds scientific and technological capacity through basic and applied research. CIDEIM offers training in antibacterial resistance, and antimicrobial stewardship including web based courses, workshops, train-the-trainer sessions, short courses, research support, symposiums, and pilot projects in three hospitals.

Questions & Answers

Q: What is the relationship between this program and the Ministry of Health in Colombia?
A: The antimicrobial stewardship program in Colombia has never received economic support from the Ministry of Health. There are some alliances, but these are very specific. E.g. sending isolates to their labs, but it has not become part of the national public health agenda. We are publishing our work and showing the impact of these programs.

Q: Don't most problems start outside hospitals when general practitioners prescribe antibiotics?
A: Yes, there is also a problem in the community. In many Latin American countries, it is possible to get antibiotics over-the-counter (i.e. with no prescription). However, very, very resistant bacteria are seen in the hospital. Where is the limit between community and hospital? MRSA is often acquired in the community, not in the hospital, and then spread in the hospital. The most common strain of *Escherichia coli* is community-acquired and then comes to hospital.

Q: What is the connection with universities that are training doctors who will work in the community and ultimately in these hospitals?
A: We get funding from pharmaceuticals for research and then engage hospitals and universities through education. Hospitals still do not see the advantage of paying for that. The problem with bringing on universities is that we are limited in how many we can work with due to funding. We are open to working with all universities. We can make alliances with whomever we want, and want to expand the reach of our program.

Q: What changes are needed in medical education to address this?
A: There is no course in medical school about how to use antibiotics or dealing with resistance. Two antibiotics with the same spectrum can react in different ways. In addition, doctors do not know enough about microbiology and may feel intimidated, leading to poor communication with microbiology staff. Infectious disease physicians' staffs do not speak enough to microbiologists.

Q: How can hospitals identify bacteria from every patient without incurring in prohibitive costs?
A: Diagnostics and surveillance playing a role in identifying of organism, but this takes money, so we are not yet there. In a couple of years, reduced costs may make it possible. We are developing technology to identify bacteria and susceptibility in a way that is not expensive for hospitals. PCR, the current method, can be expensive and we need to get it from blood.

Q: What could be recommendations for health policy?
A: One possibility would be for the Ministry of Health to institute incentives for positive and negative outcomes, but this could result in faulty data because hospitals may not want to report negative results. We need a mechanism beyond self-report by hospitals. However, the most important thing is for this issue to be recognized as a public health threat at a regional level. The last regional report is from 2010 and is outdated. Furthermore, the Ministry of Health sometimes sees nongovernmental initiatives as competition. It is important for government to work with nonprofits.

Security: Beyond the Military Security and democracy by Mr. Savio

Mr. Savio started by stating that democracy is in a crisis, which leads to human insecurity. Food and security are essential factors in the current global environment. There are differential feelings of security by generation. There was sense of security that came after World War 2, which was based on the expectation that most people have similar values. This has been changing in the last 20 years. People under 35 across the globe are part of a "generation of insecurity." Issues like climate change, job insecurity, food insecurity, and sexually transmitted diseases all add to a sense of generational divide. Approximately 400 million jobs have been lost since the attacks of September 11 and the economic crisis. The shrinking of the middle class is indicative of a problem with democracy.

We are in a system where capital, rather than people, is at the center of society. The industrial revolution and the related civil unrest provide a historical context for the current situation. Computer technologies have changed international relations. Furthermore, what is being called the fourth industrial revolution (substitution of men by robots, automation and humans being displaced) moves attention away from people's well-being

and toward technology. Some estimates predict that by 2035, 52% of industrial production will be by robots. Climate change is also a cause for human insecurity. An increase of 3.7 degrees will results in 200 million climate refugees. If the current situation continues, we are going to have an even more dramatic situation and we will see a great impact on economies, health and migration. For example, if the earth keeps warming it will be impossible to grow champagne grapes in France. Production would move to Finland or Iceland. Iceland is now the second exporter of cabbage in Europe, due in part to warmer climate. We are expected to reach 60 million climate refugees in industrialized countries because of disruptions in jobs and food production. Jobs, climate and food are the conflict issues of this generation. Global migration is a result - rather than a cause - of human insecurity. The U.S. replacing dictators in Syria is an example of a democratic effort resulting in civil unrest, which led to mass migration due to political and human insecurity. Security cannot only be brought on by military deployment. The concept of security must be vested in human security, not simply state security. If people feel secure with jobs, health, food and safety for their families, there is no tension. Communism is regaining popular appeal in Russia and around the word because of a lack of security. There is a sense of insecurity in all aspects of life, and this felt insecurity has real impact on nations. In Europe, we will see rise in xenophobic and anti-European parties. Large numbers of citizens feel unemployed, underemployed, with no anticipated pension. In other words, generally insecure. This year France and Germany will spend lots of money on policing due to refugee crisis. France will spend $100 million a day in police security. Millions will be spent to combat ISIS militarily. Nevertheless, the solution requires new kinds of alliances: police security, military security, food security, health, education, etc.

The concept of security must be vested in human security, not simply state security. Social inequality also causes insecurity. We need to need to counteract the culture of greed that makes people feel that banks have more rights than they do. The sense of social inequality is increasing globally. There is a need for participation, transparency, social justice. If we do not address people's sense of security and make them feel that they are part of the process of society, people will not feel secure. The concept of security should focus on human security. If people feel secure, there is no conflict. Speaking of security must revolve around HUMAN security.

Questions & Answers

Q: If everything is a security problem, nothing is a security problem. Can you clarify how to simplify and prioritize these conflicting issues of security?
A: We need to prioritize resources. For example, it would cost $170 billion to achieve the Millennium Development Goals. However, there is no money for this. However, if we cut 10% from global military expenses, we would have $270 billion, which is more than enough to meet the development goals. We need to put together the players and give them responsibilities. We cannot defund the military and tell military to go away. Nevertheless, we need a new mechanism that does not yet exist – an alliance of government, private sector, and civil society to address these issues.

Q: Do you agree that we have the technological wherewithal to solve these problems?
A: We need to understand demographic trends so we can prepare for them. Africa will have 2 billion inhabitants; Nigeria alone will have 400 million people; demographic forecasts indicate that the Turkish population will be larger than that of Russia. We have enough data to start thinking about solutions for the future; this is a responsibility we must take. Now I go into parliaments and none of them wants to look beyond 5 years. If we do

not have the ability to look to the future, do we expect technology to create the miracle without people doing anything?
One of the key issues we have in security now is the late capacity of reaction by public health institutions, which are not very proactive and react late to the health issues like pandemic flu, Zika, and Ebola. How can we accelerate the motion of these institutions to become more proactive?

Closing Remarks and Conclusions

Dr. Espinal closed the colloquium by asking each speaker to synthesize the most important take-away messages for the audience. These were the points highlighted by each speaker:

***Rudy Cachuela*:** We must continue to have a stable, secure, prosperous Latin American and Caribbean Region. If you agree with the assumption that health security is a component of overall regional security, then we have an obligation to further healthcare infrastructures across our regions to continue to see prosperity and security.

***Maria Villegas*:** We need a network with the right people with different perspectives working and setting priorities. We need to use the resources we have with people already working on different topics, and "twist the arm" of governments, make them commit to the issue, and allow other people to work on antimicrobial resistance.

***Roberto Savio*:** The Global Health Consortium needs to decide what its constituencies are: civil society, ministerial, academics, etc. The consortium should be a meeting place where you propose initiatives and gather people together from different parts of these constituencies.

Dr. Espinal posed the following question to the speakers:

"One of the key issues we have in security now is the late capacity of reaction by public health institutions; they are not very proactive and react late to the health issues like Pandemic Flu, Zika, and Ebola. How can we accelerate the motion of these institutions to become more proactive?"

***Maria Villegas*:** Institutions are important but they need to work with other groups, join efforts with groups that do not have the bureaucracy, such as academia. Intergovernmental groups often think that there is only one way to do things. Other people need to join the group so that they can move forward with the work.

***Roberto Savio*:** Institutions tend to be reactive. It is hard to find one that is proactive. If you take initiative, present proposals, you will create a reaction and then action. People in these institutions stay within their institutions, have little contact with people outside, and do not get much input. Many of these structures are becoming obsolete.

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