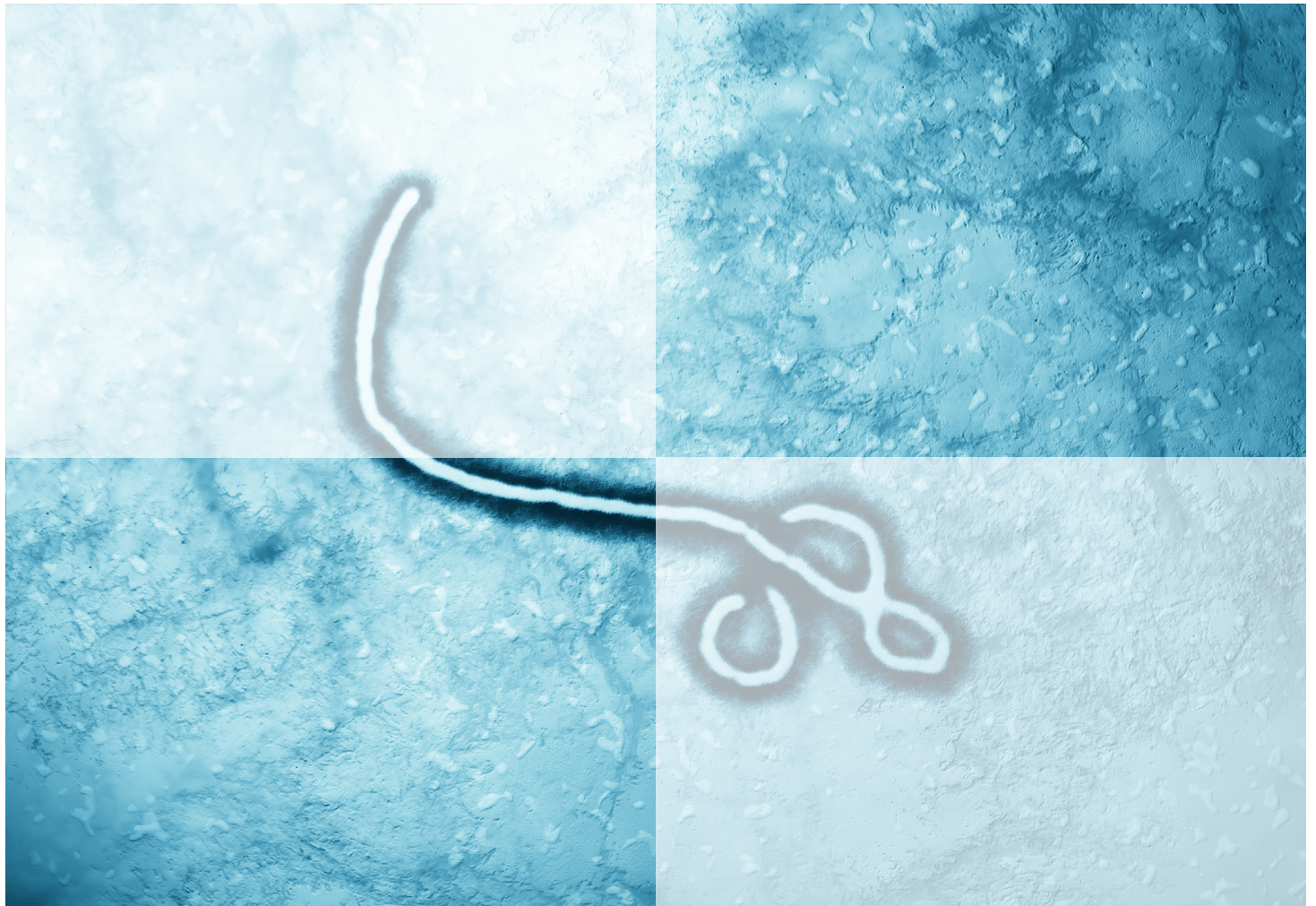


Industry Agenda

Managing the Risk and Impact of Future Epidemics: Options for Public-Private Cooperation

Prepared in collaboration with the Boston Consulting Group (BCG)

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Foreword



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The Ebola outbreak in West Africa was a public health emergency of new proportions and with new challenges for the international community. Aside from the significant social and economic impact it had on many West African countries, the epidemic also triggered a range of innovative, flexible partnership responses from businesses and civil society that complemented the channels of official assistance to affected countries.

Overall, most commentators agree that the global response to the Ebola crisis contains both successes and struggles. In any case, the range of strategic lessons learned from the outbreak provides critical insights that can be applied the next time the world faces such an outbreak.

Discussions at the World Economic Forum Annual Meeting 2015 in Davos-Klosters in late January highlighted the strong desire to share the lessons and propose practical ideas for future responses through a public-private effort. While various groups within the international community are reviewing the official response, discussions among governments, businesses, international organizations and non-governmental organizations (NGOs) at the Annual Meeting highlighted the need to examine the impact of a wider scope of partnerships and innovations that occurred, particularly within the business community and through unprecedented forms of public-private cooperation.

Through such a multidimensional review, a wider set of recommendations has been drawn up from the lessons learned, helping to develop potential models for public-private cooperation to manage future outbreaks more effectively and to reduce the risk of their occurrence altogether.

Changes in the way the global community responds to outbreaks and epidemics are gaining momentum. The challenge lies in translating the passion and commitment demonstrated into effective public-private collaboration models that focus on preparedness and in developing the necessary trust-based relationships in advance of an emergency.

Leaders from both the private and public sectors must take a closer look at the lessons learned from the Ebola outbreak, the international community's current ability to prepare for and respond to public health emergencies, and the resilience of health systems. They must also be willing to invest time and resources to develop new solutions.

The aim of this report is to start a dialogue between the private sector, the international community and the leaders who will form collaborations moving forward. Continued investment in this critical topic is imperative to ensure that stakeholders across varied sectors and regions can combat and protect against the public health emergencies that threaten communities worldwide.

Context and Approach

The Ebola outbreak in West Africa set an unprecedented challenge for the international community, including the public sector, business and civil society. As of May 2015, according to the World Health Organization (WHO), close to 27,000 suspected or confirmed cases and over 11,000 Ebola-related deaths have been recorded. Given the complexity and socio-economic impact of the crisis, the public-sector-led response received significant contributions from a wide range of organizations, including the private sector. Although the crisis has now passed its peak, the world recognizes the ongoing risk of future outbreaks or epidemics and the need to understand which response efforts work and where improvement is necessary. This report focuses on how to better harness the potential of commercial for-profit organizations (referred to as the private sector) in the future and improve collaboration between the public and private sectors.

The study described in this report had three specific goals:

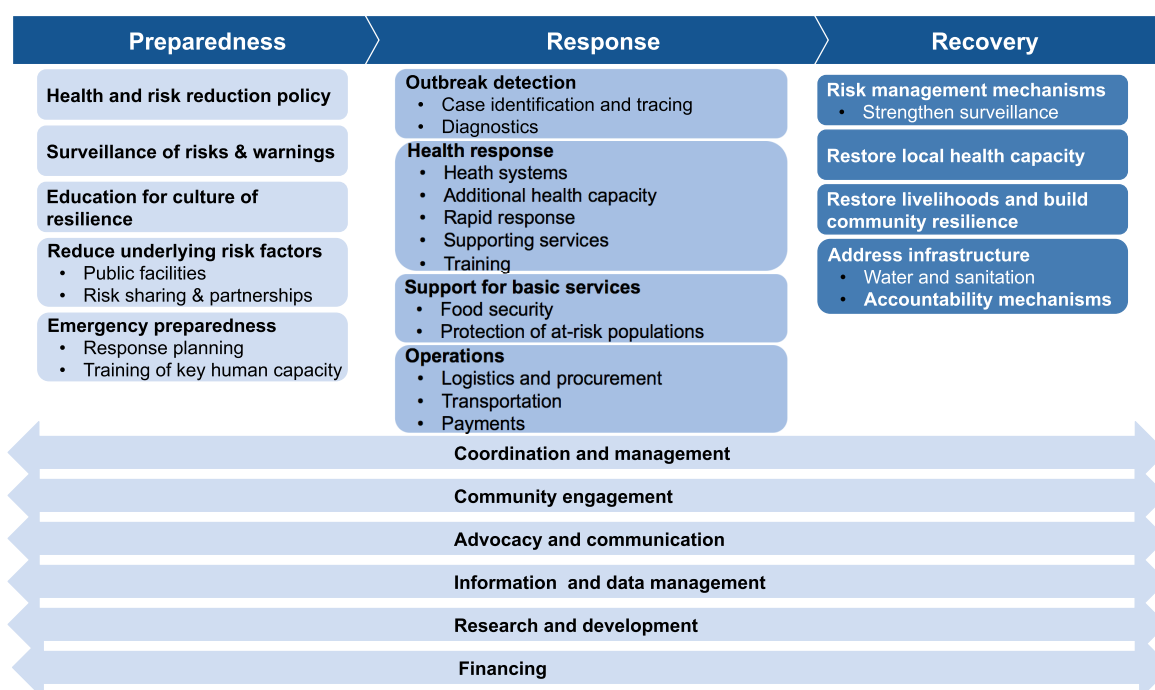
- Understand the value of private-sector engagement in the Ebola response
- Capture lessons from the private and public sectors' interaction and collaboration
- Identify potential models for public-private collaboration to optimize private-sector engagement in the preparedness, response and recovery efforts of future epidemics

While the focus of this report is collaboration related to public health emergencies in particular, the lessons, findings, and models for future collaboration obtained may apply to natural disasters and other types of emergencies that require public and private responses. In certain cases, partnerships for public health

can serve as a useful foundation to support response efforts more broadly.

The study focused on the various response activities implemented during the Ebola outbreak and considered aspects of preparedness and recovery (Figure 1). The project reviewed over 200 initiatives reported by the Ebola Private Sector Mobilization Group (EPSMG) and UN Office for the Coordination of Humanitarian Affairs (OCHA), analysing the types of contributions and donation channels. Over 60 interviews were conducted with experts in the public and private sectors (including pharmaceutical, consumer goods, technology, finance and insurance companies). The report includes input from conferences in the last quarter of 2014 and first quarter of 2015, including meetings led by the Economic Community of West African States and the African Union, the World Bank and the International Monetary Fund. It also considers discussions that took place at the Institute of Medicine's planning meeting entitled "An Operational Framework for Identifying and Effectively Responding to Global Infectious Disease and Public Health Emergencies in the 21st Century", and the Ebola Innovation Summit, hosted by the Paul G. Allen Family Foundation in partnership with the Skoll Global Threats Fund and USAID. Issues and potential partnership models were identified and vetted through roundtable workshops in Geneva, Switzerland, and Lagos, Nigeria, with over 70 participants from the private and public sectors. This study also builds on the World Economic Forum's initiative (in collaboration with the Boston Consulting Group) entitled "Health Systems Leapfrogging in Emerging Economies", which identifies the ways in which resource constrained countries can build resilient and sustainable health systems through innovation.

Figure 1: Preparedness, Response and Recovery during the Ebola Outbreak, 2013-2015



Source: Hyogo Framework for Action, "Recovering from the Ebola Response" UNDP, expert Interviews, project partner organizations, desk research, BCG.

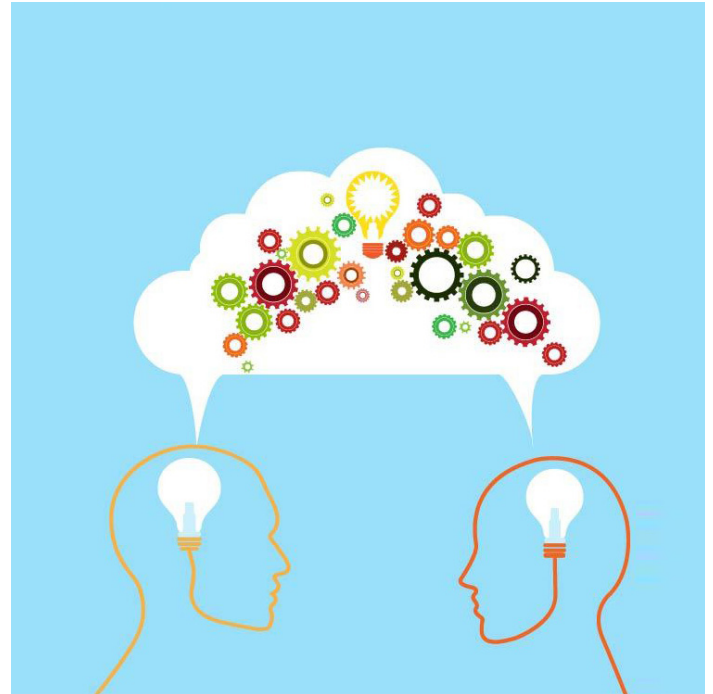
The Case for Public-Private Collaboration

Public health outbreaks and epidemics are likely to become evermore complex and challenging. The continued failure to develop resilient health infrastructure and public health systems in much of the world leaves us vulnerable to future outbreaks, and the increasingly global nature of the world makes rapid transmission across geographies a threat. At the same time, new technologies in biomedical research and mobile data and communications, often developed by non-traditional actors, are offering new opportunities to fight diseases. Rather than relying solely on traditional partners and ways of working, new ideas, partners and solutions are needed to address these challenges.

In this context, the private sector has a critical role to play to support and augment the traditional public-sector-led response. A majority of companies in the private sector are not just willing but anxious to step into this greater role. As witnessed in the case of Ebola, public health emergencies can have a major impact on employees, customer bases and operations more broadly. Epidemics can devastate economies and threaten major investments by multinationals and small businesses alike. Therefore, while many companies are compelled to act out of a sense of corporate social responsibility, for a growing number it is also good business to intervene, protecting operations and markets against these threats. Additionally, because outbreaks today can quickly turn into global crises, they can impact even those companies without direct operations in the affected areas. The current Ebola crisis affirms the private sector's willingness to contribute to the response. Data from OCHA and EPSMG show that over 150 companies participated in the Ebola response. This number is likely an underestimate as it misses smaller companies that the tracking process did not pick up.

The private sector has a lot of value to bring to an emergency response. Traditionally it has acted as a donor, and this role continues to be incredibly important, as was demonstrated by the Ebola response. Of the over 200 individual efforts tracked by OCHA and EPSMG, an estimated 75% of private-sector initiatives involved the donation of funding or supplies. In-kind donations included those manufactured by the company or purchased specifically for the cause. According to the available data, the donations of commercial companies are estimated at around \$100-200 million, although this vastly underestimates contributions as it does not capture the full value of all in-kind donations and does not account for the value of staff time spent contributing capabilities and services. The Boston Consulting Group estimates contributions may be three to six times this value.

Both the need and the potential to utilize the private sector as a partner well beyond the traditional donor role are becoming increasingly evident. Private companies have expertise and capabilities that are critical during an emergency – whether in logistics and supply chain, health, technology, data management or financial services. They also have local capacity (including equipment and personnel) and local knowledge of communities and cultures that can be invaluable when time is of the essence. In the current Ebola response, more than 20% of private-sector contributions were in the form of expert skills, services or local capacity, usually in support of international or national partners. For example, companies dedicated extensive internal resources



to the research and development of new health interventions, the transport of supplies, grass-roots educational campaigns in affected communities, the construction of Ebola treatment units, the preparation of burial grounds, and the development and deployment of innovative technologies and infrastructure to support the response. Companies also acted as advocates, drawing attention to the crisis through their connections with media and key decision-makers, thus influencing the response in positive ways.

While these initiatives and others were invaluable to the success of the response, additional untapped opportunity remains for the private sector to contribute in a health emergency. Realizing the full potential of the private sector will not come without costs or challenges, however. Not only will new ways of working be needed, but deeply engrained norms must be challenged and redefined in order to develop trust between these two sectors and enable real partnership. In addition, better coordination between the sectors will require dedicated resources. The value from closer partnership with the private sector warrants this initial investment before the next crisis hits. As one stakeholder described, "A crisis is not the time to be exchanging business cards."



The private sector can be more than just a checkbook. They can provide capabilities and expertise in partnership with the public sector that can be truly beneficial to a public health emergency.



The State of Public-Private Collaboration During the Ebola Crisis

To better understand the specific value brought by private companies and how public-private partnerships supported the Ebola response, the private sector needs to be disaggregated. As demonstrated by the OCHA and EPSMG data, the private sector is not one monolithic entity that contributed in the same way. Instead, based on the assessment of the Ebola response, companies generally play three distinct roles:

In-country operators: This diverse group includes multinationals and local companies of various sizes. What brings them together is their local presence in the affected countries, and the resulting ties to the community and motivation to act based on business continuity interests.

Expert capability companies: These companies are defined by the unique importance of their capabilities to the core of a health response effort. Irrespective of the location or nature of the outbreak, their expert skills or services are required to stem the crisis.

Greater private-sector contributors: A broad group of both international and domestic private-sector companies often become engaged based on corporate social responsibility or the drive of a leader. This group may vary vastly in terms of when they join the response, how long they stay and how much they contribute.

It is important to note that a single company may play multiple roles across these three groups, depending on the scope of its operations or the nature of the outbreak.



Each of these groups is explored in the following pages, including the role they played in the Ebola response, how they organized and collaborated with the public sector, and what is needed to support future collaboration with the public sector.

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We started with protecting and informing our employees who were in the affected areas, but to do this we knew we also needed to work with the communities in which we operate. As we saw systems breaking down, we started calling NGOs and local government to see how we could help.

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In-Country Operators

Context: In-country operators include those companies with significant operations or a large customer base in affected countries – whether multinationals, small or medium-sized enterprises. They are motivated not only by responsibility to their communities, but also by a desire to protect their operations, maintain business continuity and reduce business risks. Many in-country operators have a keen interest in supporting the health of their communities before, during and after an emergency.

Role in the Ebola response: During the Ebola outbreak, in-country operators demonstrated the wide range of contributions they can provide – not just as donors but in the co-execution of response activities. While several multinationals chose to shut down their operations and leave the area, many multinationals and domestic businesses maintained their presence and contributed meaningfully to the response. In-country operators typically first focused on protecting their employees, and where possible their operations, then expanded their response to support the communities and governments. While there were many successful examples of local companies partnering with the Ebola response, the private sector overall was not leveraged consistently for the capabilities they could provide. Lessons from the successful collaborations and missed opportunities highlight how the in-country private sector contributed in the Ebola response and can play a role in future emergencies. Specifically, in-country operators can:

- **Provide important local capacity to execute response activities.** In-country operators created educational programmes for employees and communities, established Ebola screening mechanisms and constructed treatment facilities. For instance, ArcelorMittal conducted many Ebola initiatives around community awareness and screening programmes and also used its machinery and capacity to construct nearby Ebola treatment centres. Alcoa trained its employees and their families on transmission of Ebola and how to protect themselves. The training materials were distributed to all of Alcoa's community development partners to aid local efforts to improve the population's understanding of the disease. Firestone built its own isolation and treatment centre in its facility after a case was detected and nearby hospitals were unable to accommodate the patient. In-country operators can help mobilize response activities quickly in the regions where they operate. Beyond

their monetary donations to fund staff and in-kind donations of equipment at the Lagos Ebola Emergency Operations Centre, the Dangote Foundation deployed thermal scanning systems and cameras at four international airports in Nigeria for the screening of passengers. Among these possibilities for partnership, however, opportunities were also missed for the public sector to fold private-sector companies into response efforts and better leverage their capabilities. The Coca-Cola Company, for example, used its in-country distribution network to deliver medicine and medical supplies. However, the company faced challenges in launching a more cohesive Ebola response. A lack of coordination across the actors supporting awareness and prevention campaigns limited the company's ability to apply its full set of capabilities in support of disseminating information.

- **Use networks to mobilize or advocate for key elements needed in the response.** In-country operators played an important role in influencing decision-makers. For example, the Sierra Leone EPSMG chapter successfully lobbied to keep national ports open, which maintained economic activity and enabled the response to receive shipped supplies. The private sector in the region also mobilized each other. For example, in support of a response led by the African Union, the Tony Elumelu Foundation, Dangote Foundation and other organizations in the African private sector responded quickly to calls for contributions to the AU Ebola Fund and other key Ebola funds. Other players, such as the United Bank of Africa, contributed hundreds of thousands to help the affected governments directly. These timely efforts and advocacy catalysed other African companies and individuals to contribute.
- **“Raise the flag” early due to embeddedness in their communities.** In-country operators may see emerging public health issues early through their employees and the community, particularly if they operate in more remote areas with less public infrastructure. As a result, the private sector was sometimes able to respond to the Ebola crisis before the public sector had a chance to scale its efforts. In the future, in-country operators should be integrated as a source of information for public-sector alerts or surveillance systems, and potentially as “first responders” deliberately integrated into the national response.
- **Provide international responders with local knowledge.** In-country operators have a useful perspective of what is happening on the ground, from community perceptions to the best transport routes. This can be a valuable source of information for the public sector, particularly international responders, if an appropriate channel can be created to share this information.
- **Resume business activity and investment in the region, which is an integral aspect of recovery.** In-country operators returning to business rapidly is a critical part of the economic recovery of a region – ideally once the crisis has turned the corner and the worst is over. Currently, the opportunity exists to engage the private sector in a dialogue about recovery efforts. Some efforts, such as ReGrow West Africa, are already actively looking for ways to encourage reinvestment into stalled projects and in support of small and medium-sized businesses.

How they organized and collaborated: Based on efforts initiated by ArcelorMittal, in-country operators from across the affected region self-organized, forming the Ebola Private Sector Mobilization Group (EPSMG). While this originally started among a core group of mining companies in the region, it

expanded to eventually include over 80 companies dedicated to continued business in the region. This group shared information and best practices (e.g. how to set up screening mechanisms, and what types of information to disseminate). **The participants considered the collaboration successful overall. Additionally, the majority of the public sector recognized the value of this group because it provided them with a single point of contact to interact with the private sector.** It is important to note, however, that this group developed organically after the crisis began. Not only did this take time and energy at a point when rapid action was critical, but it also likely led to some missed opportunities for collaboration because ways of working were not well established in advance. In addition, the EPSMG lacks some of the formal governance mechanisms and resources that would enable it to tackle health problems in the long term.

Additionally, while there were some formal connection points between the public response and private sector, particularly at the national level, **local responses by the private and public sectors were not well coordinated on a day-to-day basis.** For instance, local companies did not always know how best to contribute to the response, and national governments and responding agencies were not always aware of potential opportunities to partner with the local private sector. Part of the disjointed nature of private-sector interaction was driven by the fact that many public and private players were largely uncoordinated until the fall of 2014. Eventually, various public and private organizations participated in government emergency command-and-control centres (e.g. Incident Management System in Liberia and National Ebola Response Centre in Sierra Leone) including the UN Mission for Ebola Emergency Response (UNMEER), which acted as the crisis manager for the UN response. While these global channels were potential collaboration points for all actors in the affected region, the private sector often viewed them as opaque and inconsistent in their engagement, and only sporadically used them. At the same time, the public sector was confused about which private-sector companies were in the region and how they wanted to engage in the response.

What is needed for the future: For any outbreak or epidemic, in-country operators will typically have the greatest incentive to act – and act swiftly. In the future, investment in mechanisms to bring private-sector players together in high-risk geographies is likely to pay dividends in coordination and time, which are valuable assets in an emergency. These networks should be closely linked to the planned public-sector response at the national level.

Expert Capability Companies

Context: The second role of the private sector is to deliver specialized capabilities for use in health emergencies, regardless of the specific location or disease. These capabilities include supply chain and logistics, communications technology, biopharma R&D, data analysis and financial services (both financing and mobile payments). These companies often become involved for corporate social responsibility reasons, but there may also be commercial opportunities for contract or technology development.

Role in the Ebola response: Each group provided expert services or specific capabilities to support the public-sector response, most prominently as pro bono services, although there were some examples of commercial support. They were also a valuable source of innovation for public-sector agencies, helping to find new solutions for problems as they arose.

The successes and missed opportunities of expert capability companies demonstrate that these companies have critical roles to play:

- **Logistics companies activated quickly and provided key capabilities to transport goods and health workers.** Several logistics companies and international transport providers contributed critical capacity to NGOs, governments and UN agencies. Many of these arrangements were bilateral, between logistics companies and a partner. For example, FedEx supported USAID through a long-standing relationship. Other private-sector companies joined pre-organized groups to help coordinate their contributions. The Logistics Emergency Team of the UN Logistics Cluster, for example, includes private companies such as UPS, Agility and Maersk. During the Ebola emergency, it supported the Logistic Cluster's overall efforts; for instance, UPS provided a staging facility in Germany for organizations to use to expedite and transport pallets of medical supplies as well as transported goods using ocean and airfreight.
- **Pharmaceutical and diagnostic companies accelerated research but earlier action is needed.** Major pharmaceutical companies used their teams, labs and capabilities to develop and test Ebola vaccines. Johnson & Johnson (with Bavarian Nordic), GlaxoSmithKline (with the US National Institute of Allergy and Infectious Diseases), Merck and NewLink Genetics (jointly with the Public Health Agency of Canada), and Novavax all invested in an Ebola vaccine and are in various phases. Other companies conducted research and development for easier-to-use diagnostic tests or Ebola therapeutics. Many of these companies partnered with a public agency, such as the National Institutes of Health or the WHO, to support the development. International foundations, such as the Wellcome Trust and the Gates Foundation, provided critical funding to accelerate private-sector research or guaranteed purchase agreements to support vaccine manufacture. However, these efforts came at additional costs, as private-sector companies had to switch staff and manufacturing capabilities from other research and production projects to focus on Ebola. Efforts could have been vastly accelerated if more coordination and preparation had taken place in advance of the outbreak.
- **Communications technology providers helped to develop strategies for the location and deployment of on-the-ground communications hubs.** Besides donating phones and equipment to help with on-the-ground communications, the private sector also partnered effectively with the public sector to develop communications systems quickly. NetHope, a non-profit that connects NGOs with communications solutions, and its corporate partners such as Cisco and Facebook, along with critical support from the Paul G. Allen Family Foundation, worked with the UN Emergency Telecom Cluster (which coordinates communications services in emergencies) to establish over 100 satellite terminals that extended coverage for voice and data services and created broadband solutions. Specifics of where communication was needed and how to implement it required new strategies by Facebook's Data Science Team to identify the weakest points of connectivity on the ground in collaboration with telecom providers and on-the-ground responders.
- **Technology creators can develop innovative data management software and hardware but require mechanisms to standardize and prioritize the “must have” needs.** The private sector not only can provide large amounts of data through telecommunication and mobile companies, but it also has expertise that is less

commonly found in humanitarian response units, such as data analytics and IT services. For example, IBM worked with mobile companies Airtel and Echo Mobile to create a tool in partnership with the Government of Sierra Leone. The joint effort used existing technology to analyse SMS and call data from mobile phones in order to map hot spots of reported cases, but it faced challenges around accessing mobile data. Telecom provider Orange, although limited by similar data privacy issues, also worked to develop a similar tool. Additionally, software development was a hotspot of innovation, from the development of unique apps to creating data visualization. While there were some bilateral partnerships as described above, some new tools were created independently of the public responders. This created challenges as the tools did not take into account the realities of what was needed on the ground. Other highly effective solutions were restricted to narrow parts of the response and were unable to scale. The private sector and many in the public sector felt there was a push for the grandest, perfect data solution, rather than solutions that met core needs. Finding a way to harness this innovation to solve immediate problems is critical for future responses.

- **Financial services – be it mobile payment or innovative financing – were emerging areas of private-sector support that offer significant future partnership potential.** The need for a reliable method of tracking and paying both salaries and incentives for the estimated 60,000 Ebola health



workers became clear when front-line response activities were jeopardized due to delayed or incorrect payments. This led to new collaborations with the private sector. A mobile payment system, which included the identification of response workers, the tracking of movement and attendance, and on-time payment, was created through a partnership brokered by the United Nations Development Programme (UNDP), between the Government of Sierra Leone and private-sector companies on the ground. These included Airtel, Africell, payments aggregator SplashMoney, and a local information and communications technology start-up iDT Labs in Sierra Leone. This public-private partnership enabled UNDP and the Government of Sierra Leone to deliver scale, efficiency and the transparency of payments in a crisis, and has subsequently opened up new opportunities for private-sector collaboration in future responses. Beyond mobile payments, financing for future epidemics will require early and flexible funding. The Ebola response was financed by contributions from governments, social-sector organizations, private-sector companies and individuals, but new models are needed for faster future response. To do this, the private and public sectors are coming together to develop new financing options, such as draw-down facilities, insurance programmes and bonds. Swiss Re and Munich Re, for example, are developing insurance products in conjunction with the World Bank (which is establishing its own funding mechanism) to provide early financing to affected countries in Africa against future epidemics.



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Until we get past the suspicion of the private sector and see public and private sector as partners, we're going to keep repeating the same mistakes.

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How they organized: The degree of organization of each group varied. Supply chain/logistics and telecommunications companies had a more formal partnership through the UN's Cluster Approach, which brings together corporate and public partners on various topics for emergency response. In contrast, the biopharma R&D community only came together during the response, establishing ways of working and tackling cross-cutting issues as they arose. Other groups, such as financial services, are still very nascent in their development.

Two factors affected how quickly and effectively these companies could support the response. **First, having pre-established operating principles in advance of a response led to smoother engagement by core industries.** Members of the pre-established UN Clusters or other partnerships found it relatively easy to support the response, noting that they understood who to work with, had clearly defined points of contact in the public sector, and knew how to work with each other. **Second, the extent of regulatory hurdles affected how effectively groups could engage.** Companies in the biopharma R&D space faced regulatory challenges that hindered their ability to accelerate clinical trials, and liability concerns related to accelerating vaccine research delayed progress. Additionally, for both communications technology and data analysis, consistent and well-known regulations on data privacy are needed for responders to access the wealth of mobile data available for response purposes. Even well-developed clusters such as logistics have additional regulatory issues to tackle around the transport of health samples and the development of clear protocols in advance of an emergency.

Finally, it is important to note the challenges to collaboration due to tensions around commercial issues, such as protecting intellectual property or competing over commercial contract opportunities. These coalitions often bring together competitors who do not want to share the technology behind the tools they use, or who view their pro bono services as a way to build relationships for commercial work, which makes collaborating with other competitors potentially difficult.

What is needed for the future: Companies that can provide expert capabilities need to establish mechanisms and regulatory processes in advance to minimize transaction costs and achieve higher returns during an outbreak. For some industries this will require creating new ways to bring stakeholders together but, in other cases, existing clusters can be expanded to further strengthen systems and reach out to new partners.

Greater Private-Sector Contributors

Context: The final role of the private sector is played by companies that want to support the response but do not have operations in the region or any of the core capabilities discussed above. These companies are extremely varied, differing in size, location and industry. Some are international, but many are African companies that actively supported the Ebola response even though they do not directly operate in West Africa. Based on interviews, these companies are often motivated by corporate social responsibility and/or by direction from a passionate leader. In other cases, organizations may have indirect business interests in the affected region or in supporting the response activities. This group provides immense value in health emergencies, because of the number of companies that fall in this category and due to the relatively flexible resources at their disposal, which can be particularly helpful given the rigid structure within which the public sector occasionally operates.

Role in the Ebola response: Greater private-sector contributors became involved and interacted with the public sector in a wide range of ways. Some got involved very early in the response, particularly those that heard how critical the outbreak was through venues such as the Centers for Disease Control (CDC) Foundation Corporate Roundtable. Others did not become involved until late in 2014, once media attention had increased and concerns had spread among their employees and shareholders. The successes and challenges of this group during the Ebola response inform the role they can play in future emergencies. Specifically, greater private-sector contributors:

- **Had valuable resources to contribute to their public-sector partners, but many struggled to identify what to donate or how to engage.** Acting as a donor is the traditional and established role of the private sector. Financial donations in particular are especially valuable because they can be provided quickly and often without significant restrictions on use. In-kind goods, however, such as medical supplies, personal protective equipment and vehicles, are also critical for a response, particularly when public procurement is slow or challenging. Henry Schein, for example, regularly pre-positions pallets of emergency supplies in NGO partners' warehouses so they can immediately be deployed once an outbreak occurs and the NGOs are activated. BD (Becton, Dickinson and Company) made early and substantial donations of protected needle devices to the CDC Foundation and Direct Relief, which enabled health workers to perform blood sampling and intravenous therapy procedures safely in the field. However, large portions of the private sector, particularly those outside the health field, did not know where to go to support the response. Many in this group were involved with a humanitarian crisis for the first time and did not have an established means of engaging with responders. As a result, they often made redundant contributions to the same need or contributions that could not be used at all. For example, some donations that required a high degree of power consumption did not take into account the realities of electricity access on the ground. Additionally, some companies did not understand the donation guidelines of organizations such as the UN, which led to miscommunication on the ability to turn pro bono into commercially contracted donations.
- **Drove quick development of innovation solutions to unique problems, although finding channels to scale was challenging.** The private sector was a source of innovative solutions for emerging or unexpected problems the public sector faced. For example, Otherlab, with support

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In an emergency, the private sector can act more quickly sometimes than government organizations can. Public institutions should leverage this ability to expedite on key needs.

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from the US Defense Advanced Research Projects Agency, developed inflatable containment units that isolated individual patients and enabled medical workers to provide better care. Other technological innovations included quick-acting mobile decontamination centres by TOMI Environmental Solutions and a range of other innovations in various stages of piloting. Many mobile solutions emerged to manage, inform and engage with healthcare workers. However, given the limited ability to pilot in the middle of an emergency or to quickly increase production, the scaling up of these innovations was limited.

- **Had specialized expertise and services that were used to support specific needs or challenges, but this capability was underleveraged.** This group also has a range of expertise and capabilities that go well beyond traditional financial donations. Unilever, in addition to its donation of millions of bars of soap to aid the response effort, used its expertise in consumer behaviour to develop better solutions with the public sector. The company partnered with the UK Department for International Development (DFID) to develop a workshop that taught and used Unilever's behaviour principles to help DFID develop a better strategy for its teams on the ground in Sierra Leone, to work more effectively with the community. This expertise could be further leveraged by such agencies as UNICEF, to support the social mobilization pillar of the response. Similarly, GE Healthcare investigated how to use its existing technologies to support response needs by safely collecting blood samples in paper transport mechanisms for safe transfer and testing. Business service and consulting firms, such as PricewaterhouseCoopers, McKinsey & Company, and the Boston Consulting Group, used business skills to support response efforts and coordination. For instance, the Boston Consulting Group deployed a team in support of UNMEER in Accra that worked on organizational topics, performance measurement and operational planning, including with the Governments of Liberia and Sierra Leone. These contributions of capabilities were less common than expected, however, given the amount of expertise available in the greater private sector overall.

How they organized: Greater private-sector contributors had no organizing structure or entity. Companies that acted the quickest were often those that had an existing commitment to global health and that understood the basics of how humanitarian response works. They often donated through an existing partner with on-the-ground capabilities, particularly NGOs that were among the first to operate on the ground, such as Médecins Sans Frontières (MSF), Save the Children, the International Federation of Red Cross and Red Crescent Societies, and others. Interviewees said they trusted their known partner to use their donations efficiently and effectively, and to be transparent around their activity. For instance, Kaiser Permanente donated \$1 million to the Ebola effort through MSF and International Medical Corps, partially because of the past

relationship the company had developed with these partners and the trust built between them. While most said that this pre-established trust is highly valuable, they were still seeking greater holistic visibility in the overall response, instead of relying solely on their partners.

Aside from this select set of companies deeply committed to global health and/or emergency response that have the networks to get the right information, most struggled with identifying the best way to engage. **A lack of communication between the public and private sectors led to mutual confusion and frustration regarding what roles to play, what was expected, what response was needed and what support was available.** Some examples of potential communication mechanisms can be cited. EPSMG acted as a channel for the public sector to share information with regional players. Additionally, the UN Special Envoy for Ebola launched Global Ebola Response Coalition (GERC) weekly calls, which were frequently cited by the private sector as a valuable source of information that enabled them to better understand the response. However, not all private companies knew of these groups and the overall information flow between the public and private sectors had mixed success. This was likely due to the fact that these forums were organized late into the response and were not well publicized or communicated consistently as the focal point for the private-sector community at large.

What is needed for the future: Moving forward, individual bilateral partnerships and support between specific private companies and public partners will likely continue to be important. However, a forum is needed to better facilitate the exchange of information between the public and private sectors and enable private companies to more effectively contribute to the response.

Across all three groups, the range of support that private-sector companies brought to the Ebola response, not just as donors but as partners with knowledge, capabilities and expertise, demonstrates the need to more holistically consider how to best utilize the sector in public health. The patterns across all groups include the need to develop real trust between private and public partners, to prepare relationships and protocols in advance of an emergency to act quickly, and to improve information flows during a crisis. Future models and networks must further cultivate the emerging successes from the response, and continue to grow relationships.

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There wasn't always clarity on what donations were needed. There was a lot of guessing happening on both sides on what each other was doing and who could help with specific needs.

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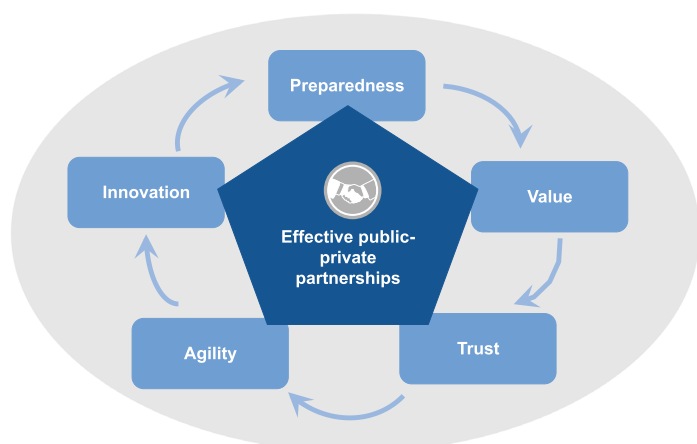
Future Models for Public-Private Collaboration in Health Emergencies

Principles for improved public-private collaboration

To achieve more efficient and effective participation by private-sector companies in health emergencies, it is important to design public-private collaboration models for each of the core groups identified: in-country operators, expert capability companies, and greater private-sector contributors. Given the range of potential collaboration platforms, the best option will depend on the particular context, objectives and scope of the desired collaboration. Before discussing specific options, several common principles for efficient and effective public-private collaboration in public health emergencies revealed in this analysis are presented:

- **Preparedness:** Address known challenges and set up mechanisms for collaboration before a crisis strikes to facilitate a rapid, well-coordinated response
- **Value:** To ensure long-term value, build collaborations at the intersections of private-sector business objectives or interests and public-sector needs
- **Trust:** Create trust-based relationships in advance of an emergency to enable better ways of working during an outbreak
- **Agility:** Keep organizational processes and structures flexible for quick action in an emergency
- **Innovation:** Encourage the ongoing development of innovative ideas and solutions to improve emergency preparation, response and recovery efforts

It takes time to build effective collaborations and networks – and to build greater trust between the private and public sectors. Yet investment in this area is critical to enable a more efficient and effective response to future public health emergencies.



Models for in-country operators

Local companies can be most effective and optimize their individual investments if they come together in private-sector networks to share information and coordinate activities. Networks of in-country operators would also enable better collaboration with the public sector, especially national governments, by designating a clear point of contact for public agencies. Models for in-country operator networks can vary greatly along a spectrum of activity levels and resource requirements. At one end is a dedicated, ongoing partnership that supports public health issues in emergency and non-emergency periods alike. At the other end is an emergency-focused network or informal cell that is only active during a health crisis, remaining dormant otherwise. Although this chapter focuses on these two models, other networks and collaborations along the spectrum could also be considered.

At the more structured end of the spectrum, one opportunity is to develop **dedicated public health partnerships**.

At-risk regions that encounter multiple public health issues on an ongoing basis may be better suited to these more durable models of engagement, if sufficient commitment can be identified. This type of formal partnership among in-country operators could focus on public health issues that endanger private-sector employees, working environments and communities. In addition to providing support during an emergency, the partnership could also include pooled funds from each member, which would be used to build medical infrastructure and deal with public health issues, such as malaria or cholera outbreaks, as they emerge. It can tackle these health issues by cultivating relationships with national governments and ministries. During an emergency – such as the Ebola crisis – these networks would direct their resources and use public relationships to support the crisis response. This type of network could be led by members of the private sector in the region, by a public-sector organization interested in forming such a group, or by a well-respected third party entity, like a foundation.

An example of this is the Private Sector Health Alliance of Nigeria. This Alliance is a private-sector-led network that mobilizes the business community to deliver better health outcomes in Nigeria. Members actively invest in the long-term success of a region through core health initiatives.

At the other end of the spectrum, the **emergency-focused network** is an informal coalition of regional and/or local private-sector companies that is only activated in a public health emergency. When activated, the members share information on the health issue and mobilize resources as appropriate. The network can be activated by a private-sector leader in the region, a group of leading private companies with a shared interest, or a network of point people at multiple companies. This model requires little in the way of a formal structure or investment, particularly during non-crisis periods. In addition, it lacks formal governance and is flexible enough that individual members can pursue their own separate initiatives. However, due to its temporary nature, members may miss out on opportunities to build formal, ongoing relationships and increase their involvement with emergency preparation.

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Preparedness is so important. It is so much easier to work out these relationships when you aren't in the middle of an emergency. If we miss out on the preparedness part, we've missed out on the profound time when we can actually do something.

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The EPSMG provides an example of this type of model. It was only created in response to the Ebola outbreak to provide a collaboration platform that provided value for those involved in Ebola-specific issues. It did not, however, have pre-established mechanisms and ways of working with the local government or other companies in the private sector.

From a long-term public health standpoint, a dedicated network is preferred because it can contribute to health and disease prevention on an ongoing basis. This model also develops trust, establishes ways of working, and deepens connections between the public and private sectors, which are all critical elements to building relationships in advance of emergencies. How groups are mobilized and which activities they pursue depend on the interests and leadership of the region's private sector. In Africa, the African Union, the UN Economic Commission for Africa, and the African Development Bank may be positioned to play a key role in supporting the development of in-country networks and connecting them to governments. Whichever model is chosen, members should try to leverage existing networks – such as the local chamber of commerce or other existing private-sector alliances already dedicated to health – whenever feasible.

Models for expert capability companies

Topic-specific collaborations that link the private and public sectors together well in advance of emergencies appear to be the most effective way to engage companies with areas of expertise that are valuable in health emergencies. This pre-alignment allows for rapid, meaningful contributions to the response when a crisis hits. These collaborations are most effective when they are active between epidemics to establish ways of working and collaborate on longer-term issues that aid response efforts, such as developing regulatory frameworks, supporting research or establishing governance structures. Because the issues and conditions vary by industry, company and topic, the models for public-private collaboration must be customized.

Logistics and supply chain: One opportunity is to build on the existing UN Logistics Cluster led by WFP. The cluster is active, well established and provides an excellent starting point for collaboration. However, by reflecting on the Ebola experience, responders can identify new ways of achieving a faster response across the supply chain from initial procurement to the last mile of distribution during public health emergencies. Discussions on building more comprehensive supply chains have already begun. For instance, WFP and partners such as Henry Schein are in the process of developing a Global Strategic Pandemic Reserve to help build physical and virtual stores of key medical supplies and to collaborate on developing a supply chain optimized for the delivery of medical goods in advance of an epidemic. Such efforts to build on existing partnerships, expand to other

key private-sector players and create new protocols will help strengthen and accelerate the response during future epidemics.

Communications technology: Although new mechanisms may not be needed due to the presence of existing UN Clusters on this topic, opportunities abound for expanding partnerships to include new private partners, particularly in the telecom space, and resolving key issues ahead of time. In particular, telecom and mobile companies can come together to address privacy regulation and develop protocols on actions to take with national governments during an emergency in order to release communications data.

Biopharma and medical research and development: There is near consensus that a well-organized structure in this field with clear governance for ongoing, active collaboration between the public and private sectors is critical to advance the research and development agenda and pre-emptively address potential risks. This group would:

- Prioritize disease(s) based on unmet medical need and scientific capability, as well as develop potential timelines for testing and trials in advance of potential epidemics
- Work together to streamline the regulatory pathway to accelerate research and address tough issues like indemnification
- Define processes and ethics frameworks for effective and efficient clinical trials – including surveillance for adverse events – if these trials need to be conducted during an outbreak
- Support the development of new funding mechanisms for research, development and the manufacture of vaccines, diagnostics and tools for which a market does not currently exist. Examples include creating a common funding pool, insurance products or post-development purchase guarantees (such as the funding committed by the global vaccine alliance GAVI and the Gates Foundation for Ebola vaccines).

To be successful, such a partnership would require ongoing commitment and collaboration among public health agencies, such as WHO and/or CDC, academic groups, healthcare companies and foundations. This group could potentially align with the existing UN Health Cluster or may require a third-party facilitator.

Data analysis: This diverse group ranges from corporate IT companies, to academic organizations, to individuals or small businesses developing smaller applications. As noted previously, during the Ebola crisis the efforts of these players led to a proliferation of ideas, but not many were scalable. This group is currently not well organized, but a mechanism to bring the public and private sectors together could:

- Identify the key types of data analysis and information management tools needed in most public health outbreaks, and the parameters under which emergency responders often work
- Define common data platforms and tools on which to connect different data systems
- Align on how to pilot innovative technology tools and scale up effective platforms

Data partnerships would require pulling together a diverse group, including established companies, small, innovative start-ups and public-sector players involved in data management, such as the United Nations Population Fund or OCHA. A foundation or other third-party facilitator would likely be needed to really catalyse

action and lead the discussion within such a varied group. The nature of innovation will be different in this network than in the biopharma R&D group, as a wider group of players have the capacity to develop data and software solutions versus the more concentrated handful of biopharma players who have sufficient medical research capacity. Given this wider set of players, membership would likely need to be more fluid and the network would need to create space for new players to emerge.

Epidemic financing: It is unclear whether a standing expert network is needed, but bringing together the various groups presently working on these efforts may allow for the sharing of ideas and information. For instance, collaboration between the public and private sectors could also be helpful to get alignment on an overall financing framework that ensures all bases are covered given the plethora of potential tools being discussed in the aftermath of the Ebola crisis.

Payments and mobile banking: Similar to epidemic financing, a formal network here may not be needed. However, collaboration among mobile-phone companies, banks and public-sector organizations like UNDP could provide enormous value by defining and aligning on common platforms, technologies and regulatory frameworks to ensure the more rapid deployment of payment systems during an emergency.

In the future, coordinating these industry groups will require leadership and investment from the public sector, the private sector and/or interested third parties. The clear risk is that without leadership in this area, momentum from the Ebola response may be lost. In some cases, it may be best to build upon existing UN-led Clusters. Others may be foundation-led (such as the Bill & Melinda Gates Foundation, Wellcome Trust and Paul G. Allen Family Foundation) or NGO-facilitated, given the particular interests and expertise of the group. Overall, more work is needed to identify and recruit “sponsors” to further develop each expert industry.

Models for greater private-sector contributors

Given this group’s diverse capabilities and geographical disbursement, creating formal partnerships with every single potential company is impractical and unlikely to yield a good return on investment in an emergency. Instead, the best ways to optimize the contributions of this group as a whole are to **provide a clear point of contact in times of crisis and improve the flow of information** within the group and between

the group’s members and the public-sector organizations leading the response.

This point of contact should be open to all private-sector companies – including those already involved as in-country operators or experts, or those with their own bilateral relationships with public health agencies – and should act as a unifying force, bringing together private-sector groups as needed during an emergency.

The establishment of a new agency or organization is not recommended as this would create additional layers of complexity. Rather, appointing a lead agency or group as a liaison to the private sector during a crisis is likely the most effective approach. This role could be taken on by a public-sector agency that already has a similar role in its mandate (such as OCHA) or by an existing public-private collaboration (such as CDC Foundation).

The role of the liaison would include the following responsibilities:

- Provide donation guidelines and guidance on how to engage best with the response efforts
- Activate an emergency communications centre as an information hub between the leader of the response effort and the greater private sector
- Maintain a short, frequently updated list of the most needed goods and services
- Create links to key responders (although they would not be responsible for matching individual donations and needs across companies and organizations)

To provide the desired effect, these processes must be set up ahead of a health crisis. Some of these protocols already exist across several UN agencies, but they must be consolidated and clearly communicated broadly to private-sector companies. The creation of a website that includes an online forum, which is regularly updated and consistently publicized and used by all partners, is helpful to consistently communicate information and donation needs in a timely way. Communications during a crisis could be further augmented by regular phone calls or other live interactions. The GERC’s weekly calls, which connected a broad range of stakeholders, provide an example of a potential channel. This teleconference forum could be expanded by more extensive private-sector participation.

Ultimately, the models for public-private collaboration will combine the options outlined above. And as further work is done to investigate these options, new variations will likely emerge. Across all, however, perfect should not become the enemy of the good. Building on what exists is much more likely to succeed than launching a comprehensive effort to create new structures and complex solutions.

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We need to create a framework to bring people together in future emergencies. We need a network that private sector companies can hook into to understand who is on the ground and what is needed so we can act faster.

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The Way Forward

The Ebola crisis put a spotlight on the opportunities for collaboration as well as the challenges in achieving it. The private sector will continue to have an important role in reaching zero cases in the current outbreak, as well as in helping the region recover, and public and private agencies alike should continue to look for partnership opportunities. There is also momentum now behind an agenda for change regarding how the global community will respond to outbreaks and epidemics in the future. The challenge is to translate this passion and commitment into public-private collaboration models that are better prepared to engage collectively in the next crisis.

Much work remains to be done in building these collaboration models. The future models put forth here must be prioritized, pressure-tested and refined – to define the relevant participants and ways of working and to establish priorities for each collaboration or partnership. Significant effort will be required to develop each idea into an operational entity that can begin to focus on preparing for public health emergencies.

To take advantage of the current momentum and to spur action, a **call to action** to the private and public sectors is proposed across the following dimensions.

Firstly, to organize and build connections between in-country operators and the public sector:

- **Public-private convening organizations, existing coalitions or other third-party groups** should identify ways in which they can support the creation of in-country networks, both formal and informal
- **In-country operators** in high-risk countries should gather to discuss how best to organize themselves to prepare for a crisis. The relevant companies should identify one or a few among the group to take a leadership role and catalyse their activity
- **National governments** should invite the private sector into preparedness planning discussions and make private-sector contributions part of the strategic plan

Secondly, to create expertise-based groups:

- **Existing UN Clusters or groups, particularly in logistics and telecommunications**, should consider how to expand their preparedness mechanisms, incorporate more private-sector partners and tackle key protocol or regulation hurdles
- The **leading private vaccine, drug and diagnostic researchers should convene with public health experts** (e.g. WHO, CDC) to establish a group to drive forward the research agenda, building on the lessons learned through collaboration on the Ebola response. Related to this, a **leading foundation or other convening organization** is called upon to steer the design and set-up of such a mechanism
- Those groups with more varied members and undetermined leaders in public health, such as data analysis, financing and mobile payments, should call on **key organizations to step up as leaders** with the ability and interest to identify other core partners and spearhead conversations on key protocols

that need to be established in advance of epidemics. The call should also be for **third-party groups** in this space to help facilitate these initial conversation

- **Regional public-sector organizations/unions** should initiate dialogue among their member nations and drive the harmonization of relevant regulatory frameworks and policies across the expert sectors in partnership with the groups mentioned above

Thirdly, to improve information flow and the ability of greater private-sector contributors to connect to the response:

- **The international public sector** should commit to lead the development of a platform, establish processes and create long-term capability to play the role of the “centre” for public-private collaboration
- **The public and private sectors** should invest resources in building this platform

Mobilizing the Call to Action

Clearly, there is much to be done to deliver on this call to action.

The findings of this rapid multi-stakeholder review suggest that there is merit in – and widespread public-private support for – such a set of actions to be mobilised.

Taken together, these various activities can be organised within an overall programme of work focused on framing what a new platform of public private cooperation with the international system should look like, in order to help countries and regions at risk from future epidemics such as Ebola.

Consequently, second phase of effort can be envisaged. This will mobilise the actions suggested above, with a collective aim of designing the precise coordination mechanism between Public and Private sectors at country level, and also the way the expertise-based groups should be organized at global level in the fields of drug discovery, supply chain, information flow management, communication and also a financial facility to help mitigate risk and provide quicker financial support on outbreak, through to innovations for public-private response and economic rebuild.

The World Economic Forum could help to facilitate such a design and scoping process over the coming months, presenting the concept at a high level meeting of public and private leaders at the Annual Meeting in Davos 2016.

Making this vision a reality will require leadership from both the private and public sectors to take a close look at the lessons learned from the Ebola crisis to arrive at real, informed solutions for the future. Continued investment in this critical topic is imperative to ensure that stakeholders across varied sectors and regions can combat and protect against public health emergencies that threaten communities worldwide.

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