How to Confront the Threat of Ebola? Arguing for Reinforced Efforts to Promote Transnational Solidarity

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Research Article

Abstract

The Ebola epidemic in 2014 in Guinea, Liberia and Sierra Leone demonstrated for the first time that in an interdependent and interconnected world the Ebola virus is no longer a negligible threat limited in its lethal impact to a few isolated African villages. By linking Carol Gould's concept of transnational solidarity with the concept of transnational advocacy networks, this article argues that a variety of actors from governments, academia, civil society and the private sector must join forces to establish a mechanism with the potential to considerably accelerate research and development (R&D) on Ebola. By presenting the key logic underlying three existing public–private partnerships on neglected diseases, the Drugs for Neglected Diseases initiative (DNDi), the TB Alliance and the Medicines for Malaria Venture (MMV), the article tries to identify the principal characteristics of such a new mechanism to successfully pool resources, knowledge and expertise for the development of tested and effective Ebola treatment. The article concludes by emphasising that the present atmosphere of transnational solidarity with those African countries affected by the Ebola epidemic represents a unique window of opportunity to create such a mechanism.

Policy Implications

- To prevent a future Ebola outbreak with potentially disastrous consequences actors from governments, civil society and the private sector should join forces and launch a public–private partnership with the objective of developing effective treatments for Ebola.
- This public–private partnership should develop the potential to significantly accelerate R&D on Ebola by pooling the knowledge, expertise and compound libraries of all relevant actors involved and thus creating a virtual and global laboratory on Ebola drug development.
- The partnership should be modelled on similar existing partnerships on neglected diseases, such as the Drugs for Neglected Diseases initiative, the TB Alliance or the Medicines for Malaria Venture, which achieved to significantly accelerate and dynamise R&D on a range of neglected diseases.
- The inherent logic of this partnership should be based on the production of Ebola vaccines as global public goods for patients in need rather than a market-based approach favouring the commercial interests of pharmaceutical companies.

The threat of Ebola

In 2014, the world witnessed the most serious Ebola outbreak[1] which had ever occurred, claiming the lives of more than 10,000 people in the West African countries of Guinea, Liberia and Sierra Leone (MSF, 2015). The virus had spread to Europe and North America[2] sowing fear and terror in the face of the absence of a tested drug and the horrendous death toll it was causing in Western Africa. More than one year after the outbreak the cases are finally declining (WHO, 2015a). The civil society organisation Médecins Sans Frontières (MSF) learned of the first suspicious cases of a 'mysterious disease' in Guinea in March 2014 and immediately recognised the severity of what was to become the largest Ebola outbreak ever in West Africa (MSF, 2015, pp. 5–6). Within the first few weeks, MSF moved more than 60 MSF international staff to Guinea to combat the outbreak (MSF, 2015, p. 6). MSF sounded the alarm bell twice, the first time on 31 March and the second time on 21 June (MSF, 2015, p. 7). The first time, MSF declared that '[Guinea was] facing an epidemic of a magnitude never before seen in terms of the distribution of cases in the country' and that the virus strain detected was 'the most aggressive and deadly' one, the so-called Zaire strain (MSF, 2014a). On 21 June, MSF declared the epidemic 'out of

control' and warned that '[w]ith the appearance of new sites in Guinea, Sierra Leone and Liberia, there is a real risk of it spreading to other areas' (MSF, 2014b). The World Health Organization (WHO), however, downplayed these warnings and gravely underestimated the dynamic spread of the virus (MSF, 2015, pp. 6–7). Although the WHO is the central international organisation in global health governance with the mandate to coordinate action on global health emergencies and exercise leadership on health issues, the organisation's role in the Ebola outbreak was characterised by a considerable lack of leadership and coordination (MSF, 2015, pp. 8–9). The governments of Guinea and Sierra Leone at times even obstructed the work of MSF (MSF, 2015, p. 8).

In the absence of decisive action from the states and the WHO, MSF took on a Herculean task despite its own limited resources. The organisation established management centres and isolation wards, trained local health workers and engaged in awareness-raising activities in local communities in Guinea, Liberia and Sierra Leone (MSF, 2015, pp. 6, 7, 10). And yet, the challenges arising from the epidemic were overwhelming. In July, a US doctor working for Samaritan's Purse, another NGO active in containing the Ebola crisis, was infected by the virus and flown to the US (MSF, 2015, p. 11). Other cases of Ebola emerged in the US and in Spain (MSF, 2015, p. 11; WHO, 2015a). At the end of July, the virus spread to Nigeria, Senegal and, in October, to Mali. Due to the governments' swift responses the virus did not have the same disastrous consequences as in Guinea, Liberia and Sierra Leone (MSF, 2015, p. 12).[3] Margaret Chan, the director-general of the WHO, finally declared Ebola 'a public health emergency of international concern' on 8 August; more than four months after MSF's first warning (WHO, 2014, p. 2). On 2 September, MSF's international president, Joanne Liu, appealed to the member states in the United Nations (UN) General Assembly to 'immediately deploy civilian and military assets with expertise in biohazard containment' (MSF, 2015, p. 13). The UN Security Council declared Ebola a threat to international peace and security and UN secretary-general Ban Ki-Moon called into life the UN Mission for Ebola Emergency Response (UNMEER), the first UN health mission (MSF, 2015, p. 14). All these actions finally led to an international response to the Ebola outbreak involving the military, financial aid and some international coordination, which in late 2014 resulted in a decline in cases (MSF, 2015, pp. 14–15).

Why did it take so long to coordinate an international response to such a serious epidemic? First, the WHO and the international community downplayed the grave situation. A second explanation lies in the severity of the virus itself and the lack of expertise in treating Ebola (MSF, 2015, p. 11). And a third explanation, which is directly related to the second one, stems from the nonexistence of a *tested and effective drug or vaccine*. Ebola is a horrible and nightmarish virus. Depending on the virus strain, the fatality rates vary between 25 and 90 per cent and the virus spreads through human-to-human transmission via direct contact with bodily fluids of infected people and surfaces, such as bedding or clothing contaminated with these fluids (WHO, 2015b). Infected people can die within weeks, representing symptoms such as fever, muscle pain, headache, vomiting, diarrhoea, organ failure and internal and external bleeding (WHO, 2015b). The virus is so dangerous that even experienced health workers, using protective suits, need to be highly careful in treating infected people. As the events in 2014 illustrated, an Ebola epidemic can lead to the breakdown of whole societies through civil unrest, fear and terror within a few months. And since African countries nowadays are much more integrated into the global system, such a deadly virus can easily travel by airplane around the world. In the face of such a dangerous virus and its potentially disastrous and devastating consequences, it is highly preoccupying that no tested drug or vaccine exists. After all, the virus has been known for almost 40 years, when it was first discovered in 1976 in Sudan and the Democratic Republic of the Congo (Zhang and Wang, 2014, p. 762). Four of the five identified virus strains have caused infections in humans (Ebola-Zaire, -Sudan, -Bundibugyo and -Tai Forest), whereas the fifth has caused infections in nonhuman primates (Ebola-Reston) (Zhang and Wang, 2014, p. 762).[4] The virus is transmitted from wild animals, such as primates or bats, which local people in African villages and towns eat as bush meat (Zhang and Wang, 2014, p. 762). Ebola as an extremely rare virus had killed around 2,400 people across 12 African countries before the 2014 outbreak (Zhang and Wang, 2014, p. 763). In 2014 alone, the virus killed four times more people than in all the four preceding decades. Due to lack of funding and international demand, several vaccines and other treatments, which have been developed by western-based researchers, are stuck in the initial stages of testing (Reardon, 2014, p. 520).

This article argues that an effort of transnational solidarity is urgently needed to dynamise research and development (R&D) on potential Ebola vaccines and treatments and avoid an even more disastrous Ebola epidemic in the future. The literature on global health governance has shown that the intergovernmental system is overwhelmed by the emergence of transnational health risks, such as diseases and epidemics, and that the states alone are no longer able to cope with these challenges (Frenk and Moon, 2013; Gostin and Mok, 2009; Hein and Moon, 2013). The most recent Ebola epidemic once more demonstrated with brutal clarity that the intergovernmental system is largely out of tune with the new realities of an interconnected and interdependent world and no longer up to the task of

confronting the challenges arising from these new realities in global health governance. Several authors have analysed the emergence of new governance solutions to these challenges, including global funds, foundations and partnerships (Buse and Harmer, 2007; Kickbusch et al., 2013; Rushton and Williams, 2011). This article aims to contribute to this literature by arguing that efforts of transnational solidarity involving a variety of state and nonstate actors may lead to a new transnational governance mechanism with the potential to accelerate R&D on effective Ebola treatment.

The article proceeds by linking Carol Gould's concept of transnational solidarity with the concept of transnational advocacy networks. Thereafter, the article describes the key logic underlying various successful transnational solidarity networks which have emerged around other infectious diseases, such as the Drugs for Neglected Diseases initiative (DNDi), the TB Alliance and the Medicines for Malaria Venture (MMV). Next, the article compares the achievements of these networks in developing new treatments and explains how a similar solidarity network for Ebola may be capable of considerably dynamising R&D on potential Ebola vaccines.

Mobilising transnational solidarity

An increasing literature seeks to explore through which processes actors in global governance, among them private actors, can be moved to comply with human rights norms (Prakash and Potoski, 2007; Risse et al., 2012; Sikkink, 2011). I present Carol Gould's concept of transnational solidarity to demonstrate how pharmaceutical companies can be moved to exercise transnational solidarity in the context of transnational advocacy networks. Building on feminist theories emphasising the notion of care in politics, Carol Gould developed the concept of transnational solidarity to better describe emerging transnational relationships in our globalised times (Gould, 2007). Transnational solidarity among organisations and individuals from different countries and world regions has become increasingly important in an age of global, transboundary challenges, the unprecedented influence of nonstate actors, the emergence of transnational networks and the ever more frequent failure of the state to tackle these very challenges (Gould, 2014; Keck and Sikkink, 1999).

In a world where structural social injustice – and the faltering progress in R&D on Ebola due to lacking market incentives is an example of structural social injustice – is perpetuated by myriad actors in interdependent and profoundly interconnected relations and transnational, cross-border networks, unjust structural processes can only be changed through collective action (Young, 2011, p. 96). Here, Iris Marion Young's social connection model is instructive. According to her model, '[o]ur responsibility derives from belonging together with others in a system of interdependent processes of cooperation and competition through which we seek benefits and aim to realize projects' (Young, 2011, p. 104). Therefore, '[a]ll who dwell within the structures must take responsibility for remedying injustices they cause, though none is specifically liable for the harm in a legal sense' (Young, 2011, p. 104). Thus, it is futile to blame pharmaceutical companies for the lack of interest in R&D on Ebola. Most western-based pharmaceutical companies engage in drug development on a market-based logic with clear commercial interests which is why 'rare' diseases (diseases the western world is not or no longer affected by) do not belong to the companies' main interests. Instead, as Young's social connection model[5] indicates, we should look for ways to establish collective mechanisms with the capacity to mobilise transnational solidarity between pharmaceutical companies and those infected by Ebola; or, in other words, create incentives for these companies to invest in R&D on Ebola. In Young's words, '[a]gents who participate in processes that produce injustice often need to reorganize their activities and relationships to coordinate their action or coordinate it differently' (Young, 2011, p. 146).

Carol Gould's concept of transnational solidarity can help us to imagine how social processes can be changed and, in our case, directed towards investing in R&D on neglected diseases. For Gould, the objects of acts of transnational solidarity are all kinds of groups, associations, actors and individuals standing in transnational or transboundary relations to one another (Gould, 2007, p. 156). Through these transnational and interconnected relations, 'when people or associations stand in solidarity with others at a distance, they identify with these others in their efforts to overcome oppression or to eliminate suffering, and they take action to aid these others or stand ready to do so if called upon' (Gould, 2007, p. 156). The outcomes of these solidarity relations are 'a shared commitment to justice, or perhaps also, [. . .] to the elimination of suffering' (Gould, 2007, p. 156). Gould enumerates three possibilities for these 'solidaristic interrelations' to emerge (2007, pp. 157–158): first, solidarity can be incentivised through media coverage of a disaster situation involving victims and people in need of help and support, such as a humanitarian crisis, an earthquake, floods or, as in our case, a virus outbreak turning into an epidemic. Second, through joint economic or political projects, which she calls 'transnational common projects', involving social movements, scientists and other kinds of organisations, fighting for more global justice. Third, solidarity can also be expressed on a discursive basis, when civil society organisations, for instance, show solidarity with victimised people through discourses to attract attention to a particular social issue. While media coverage and discursive activities of civil society actors may lead to the emergence of solidaristic interrelations, only the creation of 'transnational common

projects' has the potential to successfully institutionalise these interrelations in the long term. In the literature on global governance these 'transnational common projects' are known as transnational advocacy networks (Keck and Sikkink, 1999). These networks include 'those actors working internationally on an issue, who are bound together by shared values, a common discourse, and dense exchanges of information and services' (Keck and Sikkink, 1999, p. 89). As an international, or transnational, collaborative effort, these networks are able to pool, mobilise and exchange information to reach a particular objective (Keck and Sikkink, 1998, pp. 1–3). They are composed of different, nontraditional, actors defending a particular cause or mission when governments fail to act, with civil society actors playing an essential role in its creation and further development (Keck and Sikkink, 1998, pp. 8–12). This cause or mission is very often linked to the provision of global public goods, which are 'available for all to consume and so potentially affecting all people' (Kaul et al., 2003, p. 2). Their benefits 'extend across countries and regions, across rich and poor population groups, and even across generations' (Kaul et al., 2003, p. 2). Therefore, these networks very often emerge when governments fail to provide these public goods (Keck and Sikkink, 1998, p. 12).

Public–private partnerships (PPPs) as one particular type of transnational advocacy networks have increasingly emerged in global health governance to promote global public goods (Balcius and Novotny, 2011; Buse and Harmer, 2004). These partnerships are very often composed of nonstate actors and industry with some contribution from international organisations to further develop medicines, strengthen health services, improve education or control diseases (WHO, 2015c). These PPPs have the potential to promote and institutionalise transnational solidarity on a long-term basis by integrating pharmaceutical companies into a transnational advocacy network and lock them into solidaristic interrelations with other nonstate actors to generate public goods such as the dynamisation of R&D on neglected diseases.

The following section briefly presents the key logic underlying three highly successful examples of transnational advocacy networks, all of them PPPs, which aim to dynamise R&D on neglected diseases. I describe how these networks came into life and how they were able to provide global public goods (the production of vaccines) and, as such, create solidaristic interrelations among its different members.

Three examples of transnational solidarity for infectious disease

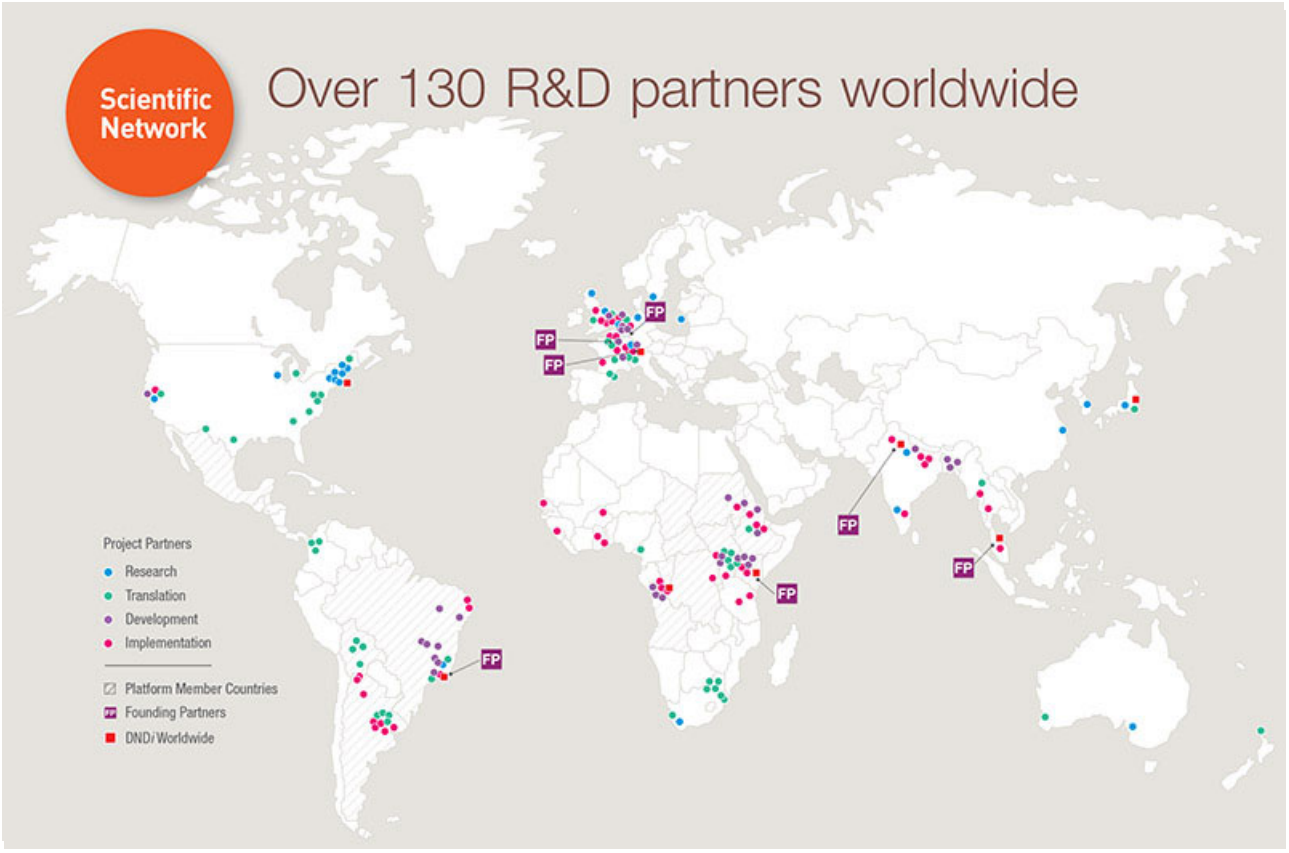
The Drugs for Neglected Diseases Initiative (DNDi)

DNDi was founded in 2003 in Geneva as a not-for-profit R&D organisation on the initiative of Bernard Pécoul (a voluntary physician at MSF) and MSF together with six other institutions – the Indian Council for Medical Research, the Kenya Medical Research Institute, the Malaysian Ministry of Health, the Brazilian Oswaldo Cruz Foundation, the Institut Pasteur in France and the Special Programme for Research and Training for Tropical Disease of the WHO – to develop effective and affordable treatments for neglected tropical diseases such as African trypanosomiasis (sleeping sickness), leishmaniasis, Chagas disease, paediatric HIV, filaria and malaria (DNDi, 2015, p. 12; International Geneva, 2013). DNDi emerged because research for many infectious diseases, which affect hundreds of millions of people in the developing world, was almost nonexistent due to the reluctance of pharmaceutical companies to invest in R&D (Trouiller et al., 2001).

In its little more than ten years of existence DNDi's activities have resulted in various achievements. DNDi developed six new treatments for several neglected diseases,[6] created a drug development pipeline, established a vast collaboration network with 20 pharmaceutical and biotechnology companies, more than 50 universities and research institutes around the globe and set up offices in Nairobi (Kenya), New Delhi (India), Kinshasa (Democratic Republic of the Congo), Rio de Janeiro (Brazil), Tokyo (Japan), Pulau Pinang (Malaysia) and New York (US) (DNDi, 2014, p. 2; DNDi, 2015, pp. 4, 12). DNDi can count on a scientific network of more than 130 partners worldwide on all continents and has furthermore established three regional disease-specific research platforms and networks for specific drug testing close to the patients in need (DNDi, 2013, p. 2; DNDi, 2015, p. 5). These research platforms involve research institutes, scientists and the national control programmes and/or Ministries of Health of the governments in the regions most affected by particular neglected diseases (DNDi, 2013, pp. 12–13). The Human African Trypanosomiasis (HAT) platform was created in Kinshasa (Democratic Republic of the Congo) in 2005 and covers the Central African region. The Chagas Clinical Research Platform was launched in Uberapa (Brazil) in 2009 covering almost all countries of Latin America; and the Leishmaniasis East Africa Platform came into being in Khartoum (Sudan) in 2003 and covers Sudan, Ethiopia, Kenya and Uganda. Figure 1 provides an overview of DNDi's worldwide scientific network (DNDi, n.d. a).

DNDi's activities in R&D are based on a two-pronged approach. On the one hand, DNDi seeks to improve existing drugs to address the most urgent patient needs (short-term approach). And on the other hand, the initiative aims to develop new treatments (long-term approach) (DNDi, 2014, p. 6). DNDi's intellectual property policy is based on the commitment of producing affordable and accessible drugs for patients in need and transforming these drugs into public goods to the benefit of all actors involved (patients, pharmaceutical companies and research institutes) (DNDi, 2014, p. 4). As a consequence,

Figure 1. DNDi's scientific network.



Source: DNDi, n.d. a

all the drugs developed by DNDi are royalty-free and nonexclusive and can therefore be locally produced in the endemic countries for an affordable price (DNDi, 2014, p. 4). The incentives created for the participation of pharmaceutical companies in the initiative are manifold (DNDi, n.d. b): first, by being associated with DNDi companies can boost their image as a responsible and ethical stakeholder in the production of new treatments. Second, they receive economic incentives as compensation for their participation and investment in R&D. Third, they benefit from the knowledge-sharing activities in the initiative. All new research knowledge generated through DNDi's activities is made available in open-access journals and databases (DNDi, 2014, p. 4).

The board of directors, the highest decision-making body, is composed of 10 to 13 members including one representative each of the seven founding members, two patient representatives and other experts with skills and knowledge not represented by other board members (DNDi, n.d. c; DNDi, 2013, p. 16). The scientific advisory committee, uniting leading scientists in the field of drug discovery and development with a special focus on the neglected diseases represented by DNDi, supports the board of directors in decisions related to R&D, scientific production and projects (DNDi, n.d. d). To remain independent in its decision-making process, DNDi relies on a variety of different donors (governments, foundations, other health partnerships and, of course, MSF) and seeks to avoid that any single donor contributes more than 25 per cent of the overall budget (DNDi, 2014).

DNDi emerged on the initiative of MSF, one of the most active civil society organisations in global health governance, and the collaborative effort of several public health institutes and government agencies from all around the world to create a transnational advocacy network for the provision of global public goods, namely affordable treatment for several neglected diseases in the developing world. Based on the resources of its partners DNDi became a global network with research platforms on all three continents of the developing world to pool information, knowledge and research capacities on specific neglected diseases. By relying on different funding sources, this transnational advocacy network created a variety of incentives to win over pharmaceutical companies and integrate them as partners into the network. As a result, DNDi became a highly successful

transnational common project institutionalising transnational solidarity and creating solidaristic interrelations among civil society actors, public health institutes, government agencies and pharmaceutical companies. The partnership guarantees its long-term commitment to the provision of R&D on neglected diseases based on the fact that its founding members decide together with public health experts and representatives of affected communities on all aspects of DNDi.

The TB Alliance

Notwithstanding Robert Koch's discovery of the bacterium responsible for Tuberculosis (TB) in 1882, TB can still be considered a neglected disease (Koul et al., 2011, p. 483; Harper, 2007, p. 309). It is the infectious disease which, after HIV/AIDS, kills most people worldwide (WHO, 2015d). And TB is particularly prevalent in the developing world where health systems are weak and drugs are not easily accessible (Harper, 2007, p. 309). As in the case of the neglected diseases DNDi concentres on, TB is a major burden in the developing world, which is why pharmaceutical companies, following the logic of the market, have no incentives to invest in R&D for more effective and affordable treatments (Ginsberg, 2011, p. 1247). After 1993, however, when the WHO declared TB a global health emergency, several international initiatives emerged to dynamise R&D activities on TB (Harper, 2007, p. 309).

The TB Alliance (Global Alliance for TB Drug Development), created in 2000, represents one of these initiatives. Conceived in Cape Town (South Africa) by 120 representatives from academia, the private sector, civil society and governments, the objective of the Alliance is to accelerate R&D on TB and produce more effective and affordable treatments for TB patients in the developing world. The Alliance's achievements are noteworthy: the TB Alliance has created the largest TB drug pipeline in the history of TB drug production (Ginsberg, 2011, p. 1248). With the new TB drugs in development the Alliance aims to reduce TB treatment, which can take between six months and two years, to a two-week process (Ginsberg, 2011, p. 1248). Whereas TB drugs have been traditionally developed on the basis of sequential, individual modifications to the existing regimen (developing one drug at a time), a very slow and inefficient process, the model of the TB Alliance relies on a co-development process (developing several drugs at the same time) (Ginsberg, 2011, p. 1249). The Alliance has created a global network of partners involving foundations, universities, research institutes, pharmaceutical companies and other health partnerships (such as DNDi). Through various partnerships pharmaceutical companies make their data voluntarily available which allows for combined testing of several TB drug candidates at the same time (Ginsberg, 2011, p. 1249). One of the most successful results of these partnerships refers to the approval in January 2013 of the first new TB drug in more than four decades (Cohen, 2013). This drug, called TMC207 (bedaquiline), was developed through a partnership between the TB Alliance and the company Jansen Pharmaceutica NV (owned by Johnson & Johnson). The company developed the drug and guaranteed that it would reach those patients in need in developing countries. At the same time, the TB Alliance was granted a royalty-free licence of the drug, while the costs for the development of the drug were shared among the members of the TB Alliance (Johnson & Johnson, 2009).

The Alliance's board of directors unites experts from the WHO, the International Monetary Fund (IMF), the Brazilian Oswaldo Cruz Foundation, the Bill & Melinda Gates Foundation and pharmaceutical companies (TB Alliance, 2015a). Several advisory boards with experts from academia, health partnerships, public health research institutes, NGOs, foundations, pharmaceutical companies and governments support the decisions of the board of directors (TB Alliance, 2015b). Through its Community Engagement Programme, the TB Alliance works together with affected communities. Through awareness-raising campaigns, community feedback and the participation in the research and testing stages of new TB drugs, the Alliance aims to adapt the drug development process to the particular needs of affected communities (TB Alliance, 2014).[7] The funding of the TB Alliance's manifold tasks comes from a variety of sources including government agencies, private foundations, other health partnerships and individuals (TB Alliance, 2015c).

The TB Alliance was called into life by more than 100 different nonstate actors including civil society actors, public health experts, governments and companies with the aim to generate new treatments for TB as a global public good. Similar to the DNDi, the TB Alliance takes advantage of the resources of all its partners worldwide to concentrate the global knowledge on TB in one global network. By integrating pharmaceutical companies into this network and providing incentives such as cost-sharing in the development of new drugs, these companies are willing to share their knowledge and provide their vaccines as global public goods. As a transnational common project the TB Alliance has dynamised R&D on TB and created solidaristic interrelations among countless representatives from civil society, governments and the private sector to alleviate the suffering of millions of people in the developing world through the production of new drugs for TB treatment.

The Medicines for Malaria Venture (MMV)

MMV represents one of several international initiatives which emerged after the turn of this century to finally get the upper hand on malaria (Wells et al., 2015). Before

the MMV was launched in 1999, R&D on malaria treatment was underfunded and largely neglected (Wells et al., 2015). In the same vein, increasing resistance to existing drugs has made it even more urgent to develop new treatments (Bathurst and Hentschel, 2006, p. 301). Cases of resistance to widely used drug treatments such as Artemisinin-based combination therapies, the two most important malaria drugs used at the beginning of this century to treat patients, chlorochine and sulphadoxine-pyrimethamine, are ever more frequent (Nwaka, 2005, p. S21).[8] At the same time, other effective malaria drugs are not widely available in developing countries due to high costs, weak local public health systems and poor supply (Nwaka, 2005, p. S21). Malaria can only be defeated with a drug development process which remains innovative and constantly produces new drugs (Wells et al., 2015, p. 424).

Similar to DNDi and the TB Alliance, MMV also created a wide network of universities, national research institutes and pharmaceutical companies with clinical research sites in Africa and Asia (Bathurst and Hentschel, 2006, p. 306). MMV relies on financial resources from its donors (governments, foundations, funds, international organisations, public health partnerships, etc.) and takes advantage of the physical infrastructure of its partners (research institutes, universities, pharmaceutical companies, biotech companies) to create a vast and worldwide virtual laboratory on new malaria drugs, coordinate its partners' activities and allocate resources to the most promising projects (MMV, 2015a; MMV, 2015b). In its deals with pharmaceutical companies MMV, if successful in developing a new drug, receives the intellectual property rights to be used within its projects, has the right to supply the drug to developing countries at a low price and use it in disease-endemic countries (Nwaka, 2005, p. S25). The deals are also attractive to pharmaceutical companies. They are offered the intellectual property rights to the drug in nonendemic countries and outside of MMV's projects and other benefits relating to public relations and human resources (Nwaka, 2005, p. S25). In its partnerships, MMV attempts to satisfy and balance the needs of all parties involved (Nwaka, 2005, p. S25). In 2013, MMV together with DNDi and the Royal Society of Chemistry agreed on contributing to open source drug discovery on neglected diseases by building new networks, online platforms and other tools as a further effort to pool resources, expertise and knowledge among scientists and lift drug development to a new level (MMV, 2013). Due to this approach of generating drugs as public goods, the drug pipeline developed by MMV represents the largest combined effort in developing new malaria drugs and constitutes the most diverse portfolio of antimalarial drug projects developed in the history of R&D on malaria (Nwaka, 2005, p. S25; MMV, 2015c). MMV was able to register four new malaria drugs between 2009 and 2012 and has seven new drugs in development (MMV, 2012). Figure 2 very well captures MMV's flourishing product development partnership model (MMV, 2015d).

MMV's board of directors is composed of a maximum of 18 members with technical expertise and knowledge in the fields MMV is engaged in and receives advisory support from several advisory committees composed of experts from academia, the private sector and civil society (MMV, 2015e). To guarantee that the developed drugs reach the patients in need, MMV established an Access and Product Management Team (APMT) and developed several tool kits, training materials and field guides for local health workers. In several projects in Latin America (Brazil), Africa and Asia APMT works to enhance out-reach, support the introduction of new drugs, inform R&D and gather market intelligence in local markets (MMV, 2015f).

MMV represents the third example of a transnational common project on neglected diseases that is composed of a variety of different nonstate actors to facilitate, accel-

Figure 2. MMV's Product Development Partnership Model.

Source: MMV, 2015d

erate and innovate R&D on malaria and produce new malaria treatments as global public goods. As DNDi and the TB Alliance, MMV integrates pharmaceutical companies into its global network by offering them the intellectual property of newly developed drugs. In exchange, MMV is allowed to distribute the drugs at low-cost in developing countries. As in the other two transnational networks, the work of MMV is accompanied by public health experts and local health workers to guarantee that the treatment reaches the patients on the ground.

These three PPPs mobilised and institutionalised transnational solidarity with the ultimate aim to produce treatment on various neglected diseases as global public goods. Once institutionalised, these transnational networks can unfold enormous potential. Not only did all of them create global knowledge platforms on specific neglected diseases by binding together actors from international organisations, civil society, governments and industry. They also shared their knowledge among each other. For instance, the malaria drug artesunate-amodiaquine was developed in cooperation between MMV, DNDi and Sanofi (Wells et al., 2015, p. 429). DNDi's cooperation with the TB Alliance granted DNDi and its partners access to the TB Alliance's collected data on leishmaniasis. Based on this new data, one of the research institutes collaborating with DNDi, by comparing it with its own data, was able to detect molecules with antileishmaniasis activity (DNDi, 2011, p. 3). These knowledge and cost-sharing activities allowed the three networks to turn pharmaceutical companies into major partners by integrating them into their collaborative structures. All three networks also work on the ground, in contact with affected communities, to guarantee that the new drugs reach those most in need through clinical research trials and the cooperation of local governments and civil society organisations. These activities are crucial to the success of these networks. Any impact of even the most effective and low-cost drug will remain low if local health care systems fail to support the introduction of the drug into local communities (Koul et al., 2011, p. 489).

And Ebola? Where is the initiative, the venture, the alliance?

In response to the 2014 Ebola epidemic, several collective initiatives have emerged. Yet, most of them are largely limited to containing the still endemic Ebola epidemic in the three West African countries Guinea, Liberia and Sierra Leone. The UN's Global Ebola Response, including the UNMEER, the first ever UN emergency health mission, involving governments, military, international organisations and programmes and aid agencies, aims to stop the outbreak, treat the infected, ensure essential public health services, preserve stability in the countries and prevent future outbreaks.[9] The fact that on 9 May 2015 Liberia was declared free of Ebola is an encouraging signal that the international community is finally gaining the upper hand in this crisis (WHO, 2015e). Besides the UN's Global Ebola Response, funding initiatives from international organisations, civil society organisations and the private sector have literally mushroomed, drawing attention to the gravity of the crisis and the urgent need for financial resources. While all these funds have contributed to raising millions of US dollars and supporting the international response activities in the three West African countries, they do little to prevent future outbreaks.[10]

Among all these short-term initiatives, one transnational partnership emerged which may be seen as an encouraging point of departure for a global Ebola alliance. In October 2014, the Public Health Agency of Canada supplied the WHO with an experimental Ebola vaccine called VSV-EBOV to make it internationally available and conduct trials in those countries affected by Ebola (Public Health Agency of Canada, 2015). On 25 November, the pharmaceutical company Merck was granted the exclusive rights to the vaccine and any follow-on products (Merck, 2014) and 'assumed the responsibility to research, develop, manufacture, and distribute the investigational vaccine' (WHO, 2015f). As a next step, the WHO together with public health experts, MSF, the Norwegian Institute for Public Health and the Ministry of Health in Guinea conducted first test trials of the vaccine in Guinea between March and July 2015 which showed a drug efficacy of 100 per cent (WHO, 2015f; Henao-Restrepo et al., 2015). The extremely successful trial received further funding from the Wellcome Trust, the UK Department for International Development, the Norwegian government (Ministry of Foreign Affairs and the Institute of Public Health), the Canadian government (Institute of Health Research, International Development Research Centre and Department of Foreign Affairs, Trade and Development) and MSF (WHO, 2015f). At the same time, the companies Johnson & Johnson and GlaxoSmithKline have also prepared experimental vaccines for testing (Hirschler, 2015).

This wave of solidaristic outpour has been a response to the massive media coverage and the tragic reports of MSF from the ground. Most of these expressions of transnational solidarity, however, will be limited in scope and time. The transnational partnership created to conduct the trial of the experimental vaccine VSV-EBOV comes closest to resembling a transnational advocacy network and may provide the basis for a long-term transnational common project. Composed of public health experts, MSF, the Wellcome Trust, the WHO, several governments and the pharmaceutical company Merck, this partnership has the objective of providing effective treatment as a global public good. And the results have been outstanding! For this moment of

transnational solidarity to last, all the actors involved in this transnational partnership should take advantage of this window of opportunity and create a transnational advocacy network, modelled on the successful examples of DNDi, the TB Alliance and MMV, to institutionalise the current wave of transnational solidarity. Such an advocacy network would certainly help for Ebola to remain on the global health agenda long after this wave of solidarity and media coverage will have ebbed away, and with it the attention of governments and international organisations. By bringing together the knowledge and experience of leading public health partnerships, research institutes, laboratories, scientists, civil society organisations and pharmaceutical companies on Ebola in a transnational network, R&D on effective and low-cost treatments for Ebola may be significantly accelerated. By bringing together various donors from governments, civil society and the private sector, economic incentives can be created for pharmaceutical and biotech companies to share their data and knowledge in a joint and transnational effort to defeat the threat of Ebola.

Let us seize the moment

Transnational solidarity networks contribute to more justice 'by linking particular individuals and groups in these networks of mutual concern and aid' (Gould, 2014, pp. 3065–3081). DNDi, the TB Alliance and MMV are encouraging examples of transnational solidarity networks which integrated a variety of different actors into a worldwide network and created virtual laboratories to significantly accelerate R&D on various neglected diseases. The emergence of these networks can partly be explained with a preoccupation for human rights and empathy by specific organisations and individuals for those hundreds of millions of people dying from these diseases in the developing world. In the case of DNDi, a voluntary physician working for MSF in Africa, Bernard Pécoul, together with MSF and other institutes, launched the initiative to improve the treatment for infectious diseases in the developing world. The TB Alliance represents a unified response of actors from academia, civil society and the private sector to the continuing plight of TB in the developing world. And the launch of MMV was a response to the tragedies caused by malaria in the developing world. All these three PPPs contribute with their work to the alleviation of suffering. By creating incentives for pharmaceutical companies and binding them together with research institutes and civil society organisations from all over the world, these partnerships create 'solidaristic interrelations' with those distant others suffering from infectious diseases and reorganise existing relationships to create more justice.

The Ebola epidemic in 2014 has opened up a window of opportunity. With the wave of transnational solidarity expressed by the empathy and care for the societies of Guinea, Liberia and Sierra Leone, the stories of survival and death, horror and pain told by MSF workers on the ground, the calls from academia and civil society for reinforced investment in R&D on neglected diseases and the successful trials of the vaccine VSV-EBOV this window is still wide open. Now is the ideal time to seize the moment and create a transnational advocacy network on Ebola and similar horrific diseases such as Marburg virus disease or Lassa fever. As this article has argued, transnational solidarity today plays a prominent role in tackling transboundary challenges. Transnational solidarity networks may prove to be the most effective response to questions of how to deal with Ebola and other extremely lethal (albeit rare) viruses, in the face of the failure of the states, the intergovernmental system and the neo-liberal market ideology. Transnational solidarity networks represent an alternative to the states and the intergovernmental system. These networks allow nonstate actors from academia, civil society and the private sector to stand together in solidarity, pool their knowledge, expertise and research infrastructure, crossing borders and the North–South divide, to react more adequately to transboundary challenges than the states. Further studies are required to analyse the impact of transnational solidarity networks in confronting other paramount cross-border challenges such as food insecurity, migration, climate change and environmental degradation.

Notes

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1. An 'outbreak' normally refers to the unusual and sudden increase in the number of cases in a particular geographic region. An 'epidemic' is an outbreak which has spread to other regions with a significant increase in the number of cases. See University of Ottawa, 2012.
2. In August 1967, a then unknown virus caused several deaths among employees of two institutes for the production and testing of sera and vaccines in the German cities of Marburg and Frankfurt am Main. Four weeks later, the virus was also detected in the blood of a veterinarian in Belgrade (former Yugoslavia). After the virus was isolated and identified it was named after the German town where it first appeared and is known today as Marburg virus, a close relative of Ebola virus. The virus was transmitted from monkeys which had been transported from Uganda to the different research institutes in Marburg, Frankfurt am Main and Belgrade. See Slencka and Klenk, 2007.
3. Nigeria: 19 confirmed cases and 8 deaths; Senegal: 1 confirmed case and no death; Mali: 8 cases and 6 deaths.
4. The Zaire-Ebola virus is by far the most lethal strain with a fatality rate ranging between 70 and 90 per cent (Feldman, 2014, p.

1375). The very same strain was responsible for the 2014 Ebola outbreak.

5. The social connection model consists of four elements: avoiding isolation of particular actors for blame, recognising that more than one or a particular group of actors contribute to structural injustice, recognising that structural injustice will continue unless social processes are changed, accepting a shared responsibility for structural injustice and engaging in collective action to change social processes (Young, 2011, pp. 104–112).
6. Two new treatments for malaria, two for visceral leishmaniasis, one for sleeping sickness and another one for Chagas disease (DNDi, 2015, p. 8).
7. See the Facebook page of the Community Engagement Programme at https://www.facebook.com/pages/TB-Alliance-Community-Engagement/154529169995sk=info&tab=page_info (Accessed 4 June 2015).
8. This challenge continues. Cases of resistance to Artemisinin-based combination therapies, a treatment used worldwide, are ever more frequent and threaten past successes in drug development (Wells et al., 2015, p. 424).
9. See the official website with updates and news at https://ebolaresponse.un.org/ebola-response (Accessed 5 June 2015).
10. There are, for example, the Ebola Crisis Fund (http://www.ebolacrisisfund.org/), the UN Foundation's Ebola Children's Release Fund (https://secure.globalproblems-globalsolutions.org/site/Donation28780.donation=form1&df_id=8780), the Global Giving Ebola Epidemic Relief Fund (http://www.globalgiving.org/projects/ebola-epidemic-relief-fund/), the Ebola Alliance of the University of South Wales (https://sphcm.med.unsw.edu.au/research/infectious-diseases/unsw-alliance-against-ebola) and many others.

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