



## AD HOC COMMITTEE ON INTERGOVERNMENTAL ORGANISATIONS

### Acting through Intergovernmental Organisations to Control the Spread of Communicable Diseases

#### Call for Evidence

The Committee has decided to undertake an inquiry into the effectiveness of action carried out through intergovernmental organisations of which the UK is a member to control the global spread of communicable diseases. You are hereby invited to submit written evidence to the inquiry. The deadline for submissions is **Monday 21 January 2008**.

#### *About the Committee*

This is a new Select Committee of the House of Lords, the Upper Chamber of the British Parliament. It was established in November 2007 with the following remit:

“To consider how contemporary issues of international policy are addressed through United Kingdom membership of intergovernmental organisations (excluding the European Union), including their impact and value for money”.

The Committee’s approach to its work is a thematic one – that is to say, it focuses on specific policy objectives and examines how these are being addressed via action through intergovernmental organisations. The EU exclusion reflects the fact that the House of Lords already has a European Union Committee. However, while scrutiny of EU activity *per se* lies outside the new Committee’s remit, it may examine the interface between activity by the EU and by non-EU intergovernmental bodies. The Committee’s remit is also limited to *intergovernmental* organisations and thereby excludes non-government bodies. However, the Committee is interested to hear non-government as well as government and intergovernmental perspectives and both types of organisation are therefore invited to submit written evidence.

The Members of the Committee are:

Lord Avebury, Lord Bowness, Lord Desai, Baroness Falkner of Margravine, Baroness Flather, Lord Geddes, Lord Hannay of Chiswick, Lord Howarth of Newport, Lord Jay of Ewelme, Lord Soley (Chairman), Lord Steinberg and Baroness Whitaker.

#### *About the Inquiry*

Infectious disease knows no national boundaries. The rapid spread of HIV/AIDS during the last 20 years, the more recent outbreak of SARS (Severe Acute

Respiratory Syndrome) and now H5N1 Avian Influenza have underlined the importance of international action to control the spread of such diseases before they become pandemics. At the same time other infectious diseases, such as Tuberculosis and Malaria, have become greater threats with the emergence of widespread drug-resistance. Drug-resistant TB has claimed many lives both in the UK and elsewhere, and the death rate from Malaria in infancy and childhood is high in many parts of the world – over 3,000 people die every day from the disease. In addition, with climate change, areas of the world which have hitherto been Malaria-free are becoming threatened by the disease, as the anopheles mosquito shows signs of spreading more widely.

This is not the first time that the House of Lords has addressed the subject of communicable diseases. In 2003 the Science and Technology Committee reported on the impact of infectious diseases in the UK and its report underlined also the importance of international collaboration. In 2005 the same committee conducted an inquiry into Pandemic Influenza. Its report was focused primarily on the measures which the UK Government was taking to deal with an outbreak of the disease if one should occur, but it noted also that prevention is better than cure and that there is a need for increased collaborative action with source countries in order to arrest the disease before it begins to spread globally. The present inquiry is focused on an in-depth examination of action through intergovernmental organisations to control the global spread infectious diseases generally and of Avian Influenza, HIV/AIDS, Malaria and Tuberculosis in particular. The Committee wishes to assess the overall effectiveness of intergovernmental action in these fields and to explore the synergy with which the various bodies involved are operating.

### *The Issues*

This Call for Evidence is addressed to a wide range of organisations. Some of them are national and others international bodies; some of them fall within government while others are non-government organisations; and some are focused on the control of specific diseases while others are concerned with the field more generally. In responding, therefore, you will need to be selective and to answer those questions in which you consider you have an interest.

Reply to the Committee by:

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The principal issues on which the Committee would welcome your views are:

1. A recent report on Communicable Diseases by the UK Department of Health stated that “post-war optimism that their conquest was near has proved dramatically unfounded”. What is your assessment of the overall position? More specifically, is it simply that not enough progress is being made in reducing the

spread of such diseases? Or is the global situation actually deteriorating? Would it be an exaggeration to talk of a crisis?

The Global Burden of Disease Study indicates that infectious diseases accounts for 22% of all deaths and 27% of disability adjusted life years (DALYs) with a disproportionate impact on the developing world where infectious diseases account for 52% of deaths and 50% DALYs in sub-Saharan Africa and only 11% of deaths and 5% of DALYs in established market economies (Globalization and Infectious Diseases: A review of the linkages. found at [http://www.who.int/tdr/cd\\_publications/pdf/seb\\_topic3.pdf](http://www.who.int/tdr/cd_publications/pdf/seb_topic3.pdf)). While progress has been made on a number of fronts, especially at the basic science level in understanding the pathogenesis of many diseases, the overall situation in controlling infectious diseases has deteriorated for a number of interrelated reasons including: 1) the increase in antibiotic resistant bacterial infections, 2) the pipeline of new molecular entities that lead to effective anti-infective agents is quite sparse, 3) large pharmaceutical companies have, in many cases, abandoned anti-infective drug development and discovery, 4) while antiviral research and development is progressing, work developing antibacterial, anti-fungal and especially anti-parasitic agents lags far behind, 5) the absence of harmonized regulatory processes hinders rapid development of anti-infective agents, 6) in many parts of the world the distribution of anti-infective agents to clinics and to patients is woefully underdeveloped, 7) the infrastructure that is necessary for rapid and accurate diagnostic testing in the developing world is woefully inadequate, 8) global infectious disease surveillance and reporting is incomplete and shared, interoperable, real-time databases are also inadequate, 9) there are an insufficient number of well-trained medical workers that are necessary to ensure proper diagnosis, prescribing and monitoring practices, 10) zoonotic and foodborne infections must be taken into consideration in the increased incidence of the spread of infectious diseases, 11) the increased incidence of national insurgencies and of failed states worsens the global communicable disease situation, 12) individual nations have different motivations in generating policy for the use of first, second and third line anti-infective agents, 13) globalization—economic globalization, demographic globalization (urbanization and refugee movement), technological global changes and environmental/climate global changes, all contribute to altered patterns of communicable diseases, frequently in unpredictable ways, 14) agencies that work for increased access to anti-infective agents must coordinate goals and policies with agencies that work to limit the emergence of resistance to anti-infective agents, 15) increased number and availability of counterfeit drugs contribute substantially to the spread and emergence of drug resistance of communicable diseases, 16) the emergence of new research in synthetic biology generates an entirely new threat space with the synthetic creation of new infectious agents, the reintroduction of infectious agents that no longer exist in nature or in generating infectious agents that exist in nature but are hard to isolate.

Therefore it is not an exaggeration to speak of a crisis; on the contrary it is a moral, medical, economic and political imperative to raise these issues at the highest level of government.

2. What reliable data exist regarding the numbers of people infected globally with the four diseases<sup>1</sup> on which the Committee is focusing particular attention? What trends are discernible in both the numbers infected and the patterns of infection? And what are the main underlying causes of infection and of any changes in its incidence and pattern?

## 1. HIV/AIDS

Global summary of the AIDS epidemic December 2007

([http://data.unaids.org/pub/EPISlides/2007/2007\\_epiupdate\\_en.pdf](http://data.unaids.org/pub/EPISlides/2007/2007_epiupdate_en.pdf))

Total 33.2 million [30.6–36.1 million]

Adults 30.8 million [28.2–33.6 million]

Women 15.4 million [13.9–16.6 million]

Children under 15 years 2.5 million [2.2–2.6 million]

People newly infected with HIV in 2007

Total 2.5 million [1.8–4.1 million]

Adults 2.1 million [1.4–3.6 million]

Children under 15 years 420 000 [350 000–540 000]

AIDS deaths in 2007 Number of people living with HIV in 2007

Total 2.1 million [1.9–2.4 million]

Adults 1.7 million [1.6–2.1 million]

Children under 15 years 330 000 [310 000–380 000]

The ranges around the estimates in this table define the boundaries within which the actual numbers lie, based on the best available information.

## 2. Tuberculosis-from the data collected by the WHO

(<http://www.who.int/mediacentre/factsheets/fs104/en/>)

### Global and regional incidence

The World Health Organization (WHO) estimates that the largest number of new TB cases in 2005 occurred in the South-East Asia Region, which accounted for 34% of incident cases globally. However, the estimated incidence rate in sub-Saharan Africa is nearly twice that of the South-East Asia Region, at nearly 350 cases per 100 000 population.

It is estimated that 1.6 million deaths resulted from TB in 2005. Both the highest number of deaths and the highest mortality per capita are in the Africa Region. The TB epidemic in Africa grew rapidly during the 1990s, but this growth has been slowing each year, and incidence rates now appear to have stabilized or begun to fall.

In 2005, estimated per capita TB incidence was stable or falling in all six WHO regions. However, the slow decline in incidence rates per capita is offset by population growth. Consequently, the number of new cases arising each year is still increasing globally and in the WHO regions of Africa, the Eastern Mediterranean and South-East Asia.

### ESTIMATED TB INCIDENCE, PREVALENCE AND MORTALITY, 2005

WHO region	Incidence <sup>a</sup>		Smear-positive <sup>b</sup>		Prevalence <sup>a</sup>		TB Mortality	
	number (thousands) (% of global total)	per 100 000 pop	number (thousands)	per 100 000 pop	number (thousands)	per 100 000 pop	number (thousands)	per 100 000 pop
Africa	2 529 (29)	343	1 088	147	3 773	511	544	74
The Americas	352 (4)	39	157	18	448	50	49	5.5

<sup>1</sup> HIV/AIDS, Tuberculosis, Malaria and Avian Influenza.

Eastern Mediterranean	565 (6)	104	253	47	881	163	112	21
Europe	445 (5)	50	199	23	525	60	66	7.4
South-East Asia	2 993 (34)	181	1 339	81	4 809	290	512	31
Western Pacific	1 927 (22)	110	866	49	3 616	206	295	17
<b>Global</b>	<b>8 811 (100)</b>	<b>136</b>	<b>3 902</b>	<b>60</b>	<b>14 052</b>	<b>217</b>	<b>1 577</b>	<b>24</b>

<sup>a</sup>Incidence - new cases arising in given period; prevalence - the number of cases which exist in the population at a given point in time.

<sup>b</sup>Smear-positive cases are those confirmed by smear microscopy, and are the most infectious cases. pop indicates population.

1. **Pursuing high-quality DOTS expansion and enhancement.** Making high-quality services widely available and accessible to all those who need them, including the poorest and most vulnerable, requires DOTS expansion to even the remotest areas. In 2004, 183 countries (including all 22 of the high-burden countries which account for 80% of the world's TB cases) were implementing DOTS in at least part of the country.
2. **Addressing TB/HIV, MDR-TB and other challenges.** Addressing TB/HIV, MDR-TB and other challenges requires much greater action and input than DOTS implementation and is essential to achieving the targets set for 2015, including the United Nations Millennium Development Goal relating to TB (Goal 6; Target 8).
3. **Contributing to health system strengthening.** National TB control programmes must contribute to overall strategies to advance financing, planning, management, information and supply systems and innovative service delivery scale-up.
4. **Engaging all care providers.** TB patients seek care from a wide array of public, private, corporate and voluntary health-care providers. To be able to reach all patients and ensure that they receive high-quality care, all types of health-care providers are to be engaged.
5. **Empowering people with TB, and communities.** Community TB care projects have shown how people and communities can undertake some essential TB control tasks. These networks can mobilize civil societies and also ensure political support and long-term sustainability for TB control programmes.
6. **Enabling and promoting research.** While current tools can control TB, improved practices and elimination will depend on new diagnostics, drugs and vaccines.

### 3. Malaria

WHO collects the most comprehensive data

([http://rbm.who.int/wmr2005/tables/table\\_a21.pdf](http://rbm.who.int/wmr2005/tables/table_a21.pdf)) with compilation and analysis carried out by Roll Back Malaria

<http://www.rollbackmalaria.org/wmr2005/>

"As of 2004, 107 countries and territories have reported areas at risk of malaria transmission. Although this number is considerably less than in the 1950s, with 140 endemic countries or territories, 3.2 billion people are still at risk. Present estimates are that around 350–500 million clinical disease episodes occur annually. Around 60% of the cases of clinical malaria and over 80% of the deaths occur in Africa south of the Sahara. Of the more than 1 million Africans who die from malaria each year, most are children under 5 years of age. In addition to acute disease episodes and deaths in Africa, malaria also contributes significantly to anaemia in children and pregnant women, adverse birth outcomes such as spontaneous abortion, stillbirth, premature delivery and low birth weight, and overall child mortality. The disease is estimated to be responsible for an estimated average annual reduction of 1.3% in economic growth for those countries with the highest burden.

The wide variation seen in the burden of malaria between different regions of the world is driven by several factors. First, there is great variation in parasite–vector–human transmission dynamics that favour or limit the transmission of malaria infection and the associated risk of disease and death. Of the four species of Plasmodium that infect humans—*P. falciparum*, *P. vivax*, *P. malariae* and *P. ovale*—*P. falciparum* causes most of the severe disease and deaths attributable to malaria

and is most prevalent in Africa south of the Sahara and in certain areas of South- East Asia and the Western Pacific. The second most common malaria species, *P. vivax*, is rarely fatal and commonly found in most of Asia, and in parts of the Americas, Europe and North Africa. There are over 40 species of anopheline mosquitoes that transmit human malaria, which differ in their transmission potential. The most competent and efficient malaria vector, *Anopheles gambiae*, occurs exclusively in Africa and is also one of the most difficult to control. Climatic conditions determine the presence or absence of anopheline's vectors. Tropical areas of the world have the best combination of adequate rainfall, temperature and humidity allowing for breeding and survival of anophelines.

The second major factor contributing to regional and local variability in malaria burden is differences in levels of socioeconomic development. Determinants include general poverty, quality of housing and access to health care and health education, as well as the existence of active malaria control programmes providing access to malaria prevention and treatment measures. The poorest nations generally have the least resources for adequate control efforts. In many poor countries, exposure to malaria of vulnerable populations is enhanced by migrations enforced by poverty and/or conflict."

#### 4. Avian Influenza

[http://www.who.int/csr/disease/avian\\_influenza/country/cases\\_table\\_2008\\_01\\_24/en/index.html](http://www.who.int/csr/disease/avian_influenza/country/cases_table_2008_01_24/en/index.html)

#### Cumulative Number of Confirmed Human Cases of Avian Influenza A/(H5N1) Reported to WHO

24 January 2008

Country	2003		2004		2005		2006		2007		2008		Total	
	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	8	5
Cambodia	0	0	0	0	4	4	2	2	1	1	0	0	7	7
China	1	1	0	0	8	5	13	8	5	3	0	0	27	17
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	0	0	43	19
Indonesia	0	0	0	0	20	13	55	45	42	37	3	3	120	98
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	3	2
Lao People's Democratic Republic	0	0	0	0	0	0	0	0	2	2	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	1	1	0	0	1	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	1	1	102	48
Total	4	4	46	32	98	43	115	79	86	59	4	4	353	221

Total number of cases includes number of deaths.  
WHO reports only laboratory-confirmed cases.  
All dates refer to onset of illness.

3. What intergovernmental surveillance systems exist to give early warning of outbreaks of infectious diseases? Are these systems adequate? And what improvements might be made?

Data is collected by a number of agencies including the

1. World Health Organization, Global Outbreak Alert and Response Network (GOARN) <http://www.who.int/csr/outbreaknetwork/en/>

2. EuroTB (tuberculosis <http://www.eurotb.org/> )

3. EuroHIV (HIV/AIDS <http://www.eurohiv.org/>)

4. EISS ( influenza <http://www.eiss.org/> )

5. EU-IBIS (*N meningitidis* and *H influenzae* <http://www.euibis.org/index.htm> )

6. EWGLINET (legionnaires disease <http://www.ewgli.org/ewglinet.htm> )

7. EuroCJD (Creutzfeldt-Jakob disease <http://www.eurocjd.ed.ac.uk/> )

8. DIVINE (foodborne enteric viral infections

[http://www.rivm.nl/en/aboutrivm/projects/index/background\\_information\\_objectives.jsp#tcm:13-25598](http://www.rivm.nl/en/aboutrivm/projects/index/background_information_objectives.jsp#tcm:13-25598))

9. EARSS (antimicrobial resistance <http://www.rivm.nl/earss/> )

10. BSN (basic surveillance network

<http://www.eurosurveillance.org/em/v09n07/0907-221.asp> )

11. ESAC (antimicrobial consumption) <http://www.esac.ua.ac.be/>

12. EUCAST (antimicrobial susceptibility testing

[http://www.escmid.org/sites/index\\_f.aspx?par=2.4](http://www.escmid.org/sites/index_f.aspx?par=2.4) )

13. ENIVD (imported viral diseases

<http://www.eurosurveillance.org/em/v03n07/0307-223.asp> )

14. EUVACNET (vaccine preventable diseases

<http://www.euvac.net/graphics/euvac/index.html> )

15. DIPNET (diphtheria <http://www.eurosurveillance.org/em/v12n12/1212-225.asp> )

16. ESSTI (sexually transmitted diseases <http://www.essti.org/epidemiology.php> )

17. US Centers for Disease Control (CDC) National Electronic Disease Surveillance System (NEDSS) <http://www.cdc.gov/nedss/>

18. US CDC Early Aberration Reporting System EARS

<http://www.bt.cdc.gov/surveillance/ears/>

19. US CDC BIOSENSE <http://www.cdc.gov/biosense/>

20. US Department of Homeland Security BLOWATCH

[http://www.dhs.gov/xoig/assets/mgmtrpts/OIG\\_07-22\\_Jan07.pdf](http://www.dhs.gov/xoig/assets/mgmtrpts/OIG_07-22_Jan07.pdf)

21. Enter-net (enteric pathogens

<http://www.cdc.gov/ncidod/eid/vol4no3/yang.htm> )

22. Wild Bird Global Avian Influenza Network for Surveillance (GAINS)

<http://www.gains.org/>

23. ESSENCE (US Military electronic Surveillance System for the Early Notification of Community-based Epidemics

<http://www.geis.fhp.osd.mil/GEIS/SurveillanceActivities/ESSENCE/ESSENCEIV.asp> )

24. GEIS (US Department of Defense Global Emerging Infections Surveillance and Response System <http://www.geis.fhp.osd.mil/> )

25. ARGUS (integration of disparate data

<http://biodefense.georgetown.edu/projects/argus.aspx>)

As one can tell from the sheer number of surveillance systems, integration is lacking as is interoperability, security, real time data collection and incentives to contribute data. In addition, these databases do not link in an operational sense to other databases such as clinical trial databases, drug discovery databases and regulatory databases. Furthermore, all databases are incomplete in collection and are limited by the inadequacy of the existing diagnostic infrastructure, the lack of adequately trained medical personnel and the lack of adequate death registries.

4. Given the continuance of current or planned intergovernmental programmes to prevent or control the four diseases, what predictions can be made of their likely spread and pattern over the next 10 years?

The complexity of the system, makes it difficult to predict with any given level of certainty, however, judging from past and the circumstances enumerated in response to question 1, I would suggest that the situation will continue to worsen until the issues raised here are not only addressed but the problems solved.

I agree in most cases with the US Central Intelligence Agency's three scenarios in its assessment of the course of the infectious disease threat from 2000-2020: (<http://www.au.af.mil/au/awc/awcgate/cia/nie99-17d/index.htm>)

#### **"1) Steady Progress**

The least likely scenario projects steady progress whereby the aging of global populations and declining fertility rates, socioeconomic advances, and improvements in health care and medical breakthroughs hasten movement toward a "health transition" in which such noninfectious diseases as heart disease and cancer would replace infectious diseases as the overarching global health challenge. We believe this scenario is unlikely primarily because it gives inadequate emphasis to persistent demographic and socioeconomic challenges in the developing countries, to increasing microbial resistance to existing antibiotics, and because related models have already underestimated the force of major killers such as HIV/AIDS, TB, and malaria.

#### **2) Progress Stymied**

A more pessimistic--and more plausible--scenario projects little or no progress in countering infectious diseases over the duration of this Estimate. Under this scenario, HIV/AIDS reaches catastrophic proportions as the virus spreads throughout the vast populations of India, China, the former Soviet Union, and Latin America, while multidrug treatments encounter microbial resistance and remain prohibitively expensive for developing countries. Multidrug resistant strains of TB, malaria, and other infectious diseases appear at a faster pace than new drugs and vaccines, wreaking havoc on world health. Although more likely than the "steady progress" scenario, we judge that this scenario also is unlikely to prevail because it underestimates the prospects for socioeconomic development, international collaboration, and medical and health care advances to constrain the spread of at least some widespread infectious diseases.

#### **3) Deterioration, Then Limited Improvement**

The most likely scenario, in our view, is one in which the infectious disease threat--particularly from HIV/AIDS--worsens during the first half of our time frame, but decreases fitfully after that, owing to better prevention and control efforts, new drugs and vaccines, and socioeconomic improvements. In the next decade, under this scenario, negative demographic and social conditions in developing countries, such as continued urbanization and poor health care capacity, remain conducive to the spread of infectious diseases; persistent poverty sustains the least developed countries as reservoirs of infection; and microbial resistance continues to increase faster than the pace of new drug and vaccine development. During the subsequent decade, more positive demographic changes such as reduced fertility and aging populations; gradual socioeconomic improvement in most countries; medical advances against childhood and vaccine-preventable killers such as diarrheal diseases, neonatal tetanus, and measles; expanded international surveillance and response systems; and improvements in national health care capacities take hold in all but the least developed countries. Barring the appearance of a deadly and highly infectious new disease, a catastrophic upward lurch by HIV/AIDS, or the release of a highly contagious biological agent capable of rapid and widescale secondary spread, these developments produce at least limited gains against the overall infectious disease threat. However, the remaining group of virulent diseases, led by HIV/AIDS and TB, continue to take a significant toll."

5. What do you consider to be the principal blockages to achieving progress in the prevention or control of the four diseases? And how might these blockages be removed by more, or better-targeted or better-coordinated intergovernmental action?

The principal blockages are enumerated in response to Question 1. The only way I see to overcome these issues will be to completely develop a Global Compact for Infectious Diseases as we describe here:

#### Making the Case for an Enforceable Global Compact for Infectious Diseases

We live in a world of pandemic, epidemic and endemic infectious diseases that threaten personal, national and international security. The current realities are overwhelming. Each year, 300 million cases of malaria kill two million people. An estimated 3% of the world's population—170 million people—is chronically infected with the hepatitis C virus. About four million people are newly infected each year, many of who will develop a chronic infection associated with cirrhosis and liver cancer. Hepatitis B infects one in three people worldwide, an estimated 2 billion people, and of the 400 million people chronically infected, approximately 1 million will die each year from complications associated with the virus. One third of the world is infected with *M. tuberculosis* with 10 million cases each year accounting for two million deaths. About one third of the world's population is affected by schistosomiasis and soil-transmitted helminths, representing more than 40% of the disease burden due to all tropical diseases excluding malaria. Finally HIV, with over 40 million infected people worldwide, resulted in over 3 million deaths in 2005 and helps foster the growth of other dangerous diseases like MDR and XDR strains of tuberculosis. The total mortality from infectious diseases worldwide exceeds 18 million deaths each year—one third of all human deaths—including many that could be prevented by efforts to research, develop and distribute new pharmaceuticals.<sup>i</sup> Casualties approach 50,000 each day, a number that, in light of the potential to prevent and treat these diseases, represents a global moral burden.

Beyond the undeniable moral significance of this state of affairs, our collective failure to give this problem the attention it deserves has implications for the economic wellbeing of both the developed and developing world<sup>ii</sup>. International development scholars have described the role that infectious diseases play in the perpetuation of poverty in the developing world: destroying family structures and limiting economic and educational opportunities. However, infectious diseases are not merely an “over there” problem but a symmetric threat that imperils the economic security of all nations. While the social disintegration that accompanies an epidemic has filtered into the public consciousness, the resulting economic disruption is less well-known. A few weeks after the identification of SARS, the disease had already cost nearly \$30 billion, an amount sufficient to prevent 8 million deaths from infectious disease worldwide.<sup>iii</sup> A potential H5N1 pandemic carries an even higher cost, with economic losses approaching 600 billion dollars in the United States alone, depending on the virulence and mortality rate of the pandemic strain.<sup>iv</sup> Even without an epidemic, the spread of antibiotic resistant strains of bacteria imposes a persistent cost in terms of both health and dollars. Medical and popular literature is replete with reports of life-threatening infections caused by bacteria that are increasingly resistant to existing antibiotics. The recent Infectious Diseases Society of America report observed that the CDC estimates that 2 million people in the United States will acquire a nosocomial bacterial infection accounting for 90,000 deaths and that “in a growing and frightening number of cases, these bacteria are resistant to many approved drugs, and patients have to be treated with new, investigational compounds or older, toxic alternatives.”<sup>v</sup>

Finally, the increasing prevalence of dangerous infections and antibiotic

resistant strains impacts both national and international security. While dangerous pathogens will not mobilize armies nor annex land, if unchecked they create human costs rivaling those of armed conflict, while simultaneously restricting the freedom of policymakers to address other pressing concerns. A study of United States national security issues conducted by the Woodrow Wilson School of Public and International Affairs at Princeton University unequivocally states that, “American national security in the 21st century ... is likely to be threatened by pathogens as much as people. New diseases and antibiotic-resistant strains of old ones are on the rise...”<sup>vi</sup> Clearly, the problem of new and emerging infectious diseases is global.

### **What to do about it?—A Global Compact for Infectious Diseases**

We propose a new approach, a strategy based on the creation of a unique, four-point International Compact<sup>vii</sup> for Infectious Diseases (the “Compact”:) distinguished by:

**Compact Core Mission I:** Establish, maintain and monitor a shared international data and knowledge base for infectious diseases, including but not limited to biosurveillance information, basic research data, relevant pharmaceutical data and suites of services and skills.

**Compact Core Mission II:** Establish, maintain and monitor a network of international basic science research centers that will support fundamental investigations into the pathophysiology of certain microbial threats to global health.

**Compact Core Mission III:** Expand capabilities for the production of vaccines and therapeutics expressly for emerging and reemerging infections

**Compact Core Mission IV:** Establish, maintain and monitor international standards for best laboratory and regulatory practices

Through the implementation of these four core missions, the Compact will minimize the impact of infectious diseases on national and international health, social and economic development and international security. The key benefit of the Compact is to drive innovation and progress in four core areas: information and knowledge sharing, basic science, drug and vaccine development and best laboratory and regulatory practices. As shown in Figure 1, these missions are interconnected; without a strong foundation of basic science, the drug and vaccine pipelines dry up. Similarly, in the absence of effective biosurveillance it becomes difficult to project which strain of an emerging disease represents the most significant threat, which in turn hampers our ability to create countermeasures. Information technology and knowledge sharing will drive new science, which in turn can modify and inform regulatory initiatives. Standardized regulatory regimes enable new drugs and vaccines that will change global epidemiological patterns and these patterns must be reintegrated into a central database, beginning the cycle again.

Addressing the problem as a whole creates powerful incentives for stakeholders to participate. For example, in order to access a central database containing information on current clinical trials, epidemiological data and new compounds and targets, participants would pledge to implement best laboratory and regulatory

practices. By bringing together government, the private sector and academia the Compact allows each group to institutionalize their relations with the others. Pharmaceutical companies and public-private development partnerships can find partners to help take promising leads through to development. With the inclusion of post marketing/post distribution clinical trial data in the database, philanthropic organizations and governments will be able to understand the effects their investments are having throughout the world. Academics will acquire additional funding streams for their research as well as input from their colleagues all over the world. Finally, all parties will work together to harmonize regulatory processes across the board, reducing barriers to market entry for much needed therapeutics and ensuring their wider distribution.

There already exist a large number of databases that address one or more of these issues, e.g., the revised 2005 International Health Regulations (IHR). We propose developing an information technology architecture that will seamlessly integrate these databases, make them user friendly yet provide the necessary security and add new data as recommended by the wide user community. The challenges here are formidable, but hardly insurmountable. The greatest obstacle is the need for trust between signatory nations and a willingness to share data. There are technical challenges as well. Any attempt to create a common architecture for information systems would require common ontologies. New algorithms and models of disease spread need to be developed and validated. Lastly, the language of the Compact has to address the issue of non-compliance by establishing a robust platform for the public dissemination of compliance status.

### **Organization and Governance**

In order to accommodate the various interested parties and work within the limits of international law, the Compact will embrace a two-pronged approach, working with states in the form of a treaty and with other interested parties (NGOs, academic institutions and the private sector) as a softer, pledge-based agreement.

While these differences are structural rather than substantive, both approaches have their limitations. Treaties must be ratified through domestic processes that vary widely from state to state and take an extended amount of time to enter into force. Furthermore, states jealously guard their sovereign prerogatives and thus enforcement regimes must be devised in a manner that maximizes both effectiveness and feasibility.<sup>viii</sup> However, once in force a treaty creates a body of “hard law” around an issue, providing a legal basis for international enforcement. A compact structure, in contrast, allows NGOs, the private sector and academic institutions to submit a pledge of membership and voluntary compliance, making it quick to set up and allowing interested parties to coalesce around an issue.<sup>ix</sup>

By providing parallel frameworks for different parties, the overall project will, over time, achieve the benefits of each. Domestic groups that pledge their membership can apply pressure to their home states, hopefully speeding ratification of the treaty framework. By bringing together both state and non-state actors, the overall aims of the Compact will be debated from a variety of different viewpoints, thereby enhancing the legitimacy of the project and promoting a thorough understanding of its goals. In addition to the enhanced situational awareness that will come from the establishment of a truly global database, the benefits to signatory nations from both the developed and developing worlds are significant. Once fully implemented, the Compact will provide access to relevant pharmaceuticals at a low cost, ensure better quality control, reduce barriers to entry in underserved markets, provide signatories

with access and participation in high-level research endeavors and distribute the costs and risks of R&D across a number of countries.

The key to any progress against infectious diseases is a structure that brings together these diverse interests in a lasting fashion. Without such a structure, the commitment to reducing the impact of infectious diseases on our national, economic and personal security will be subject to the political vagaries of the moment, leaving us unprepared for the next global health crisis. Language and concepts embodied in the Compact have already found their way into international statements of the problem by diverse communities including those with a global human and economic development agenda —see for example the recent OECD sponsored Noordwijk Medicines Agenda<sup>x</sup>, and the biodefense/biosecurity community, see the Lake Como Consensus Statement of Priority Actions for the Promotion of Global Biosecurity<sup>xi</sup>. In addition, the House and Senate are considering the bipartisan Strategies to Address Antimicrobial Resistance (STAAR) bills<sup>xii</sup> and the Commonwealth of Pennsylvania has declared the development and rational use of antibiotics a research priority for the state in 2008-2009. Fully aware of the challenges inherent in a global initiative of this scale, we propose as a matter of urgency that efforts be accelerated to draft, debate, refine and implement the first *Global Compact for Infectious Diseases* as the common international instrument to achieve these goals.

<sup>1</sup> T.W. Pogge, Human Rights and Global Health: A Research Program. *Metaphilosophy*, Vol. 36, Nos. 1/2, January 2005. pp. 1-2

<sup>1</sup> L.O. Gostin. Meeting Basic Survival Needs of the World's Least Healthy People Toward a Framework Convention on Global Health; Inaugural Lecture for the Investiture of the Linda D. and Timothy J. O'Neill Professor of Global Health Law. April 19, 2007.

<sup>1</sup> I. Kickbusch. A Wake-Up Call for Global Health, *International Herald Tribune* April 29, 2003. Cited in M. Selgelid, *Ethics and Infectious Disease*, *Bioethics* Vol. 19, Number 3, 2005

<sup>1</sup> A Potential Influenza Pandemic: Possible Macroeconomic Effects and Policy Issues, Report Presented to the Congressional Budget Office December 8, 2005; revised July 27, 2006.

<http://www.cbo.gov/ftpdocs/69xx/doc6946/12-08-BirdFlu.pdf>

<sup>1</sup> Bad Bugs, No Drugs, the Infectious Diseases Society of America, July 2004

<sup>1</sup> G. J. Ikenberry and A. Slaughter, *Forging a World of Liberty Under Law: U.S. National Security in the 21st Century* <http://www.wps.princeton.edu/ppns/report/FinalReport.pdf>

<sup>1</sup> We deliberately use the concept of “compact” in order to avoid the term “treaty” for many of the reasons discussed by Jean-François Rischard in *Global Issues Networks: Desperate Times Deserve Innovative Measures* THE WASHINGTON QUARTERLY \_ WINTER 2002-03, 26:1 pp. 17–33. We expect that the compact will have a structure resembling networked governance as described in Rischard’s paper. We also do not rule out on the alternatives, both legal and political.

<sup>viii</sup> See George W. Downs, David M. Rocke, Peter N. Barsboom, *Is the Good News about Compliance Good News about Cooperation?* *International Organization*, Vol. 50, No. 3 (Summer, 1996), pp. 379-406

<sup>ix</sup> See Rischard, Matthew, *Global Issues Networks: Desperate Times Deserve Innovative Measures*, *The Washington Quarterly* Vol. 26, No. 1 pp. 17-33 and *High Noon: We Need New Approaches to Global Problem-Solving, Fast*, *J Int Economic Law* 4: 507-525.

<sup>x</sup> [http://www.oecd.org/document/31/0,3343,en\\_2649\\_18532957\\_38202975\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/31/0,3343,en_2649_18532957_38202975_1_1_1_1,00.html) and comments found in Callan B, Gillespie I. The path to new medicines. *Nature*. 2007 Sep 13;449(7159):164-5.

<sup>xi</sup> <http://www.ransac.org/Projects/Biological%20Threat%20Reduction%20Project/index.asp>

<sup>xii</sup> <http://www.idsociety.org/Content.aspx?id=7000>

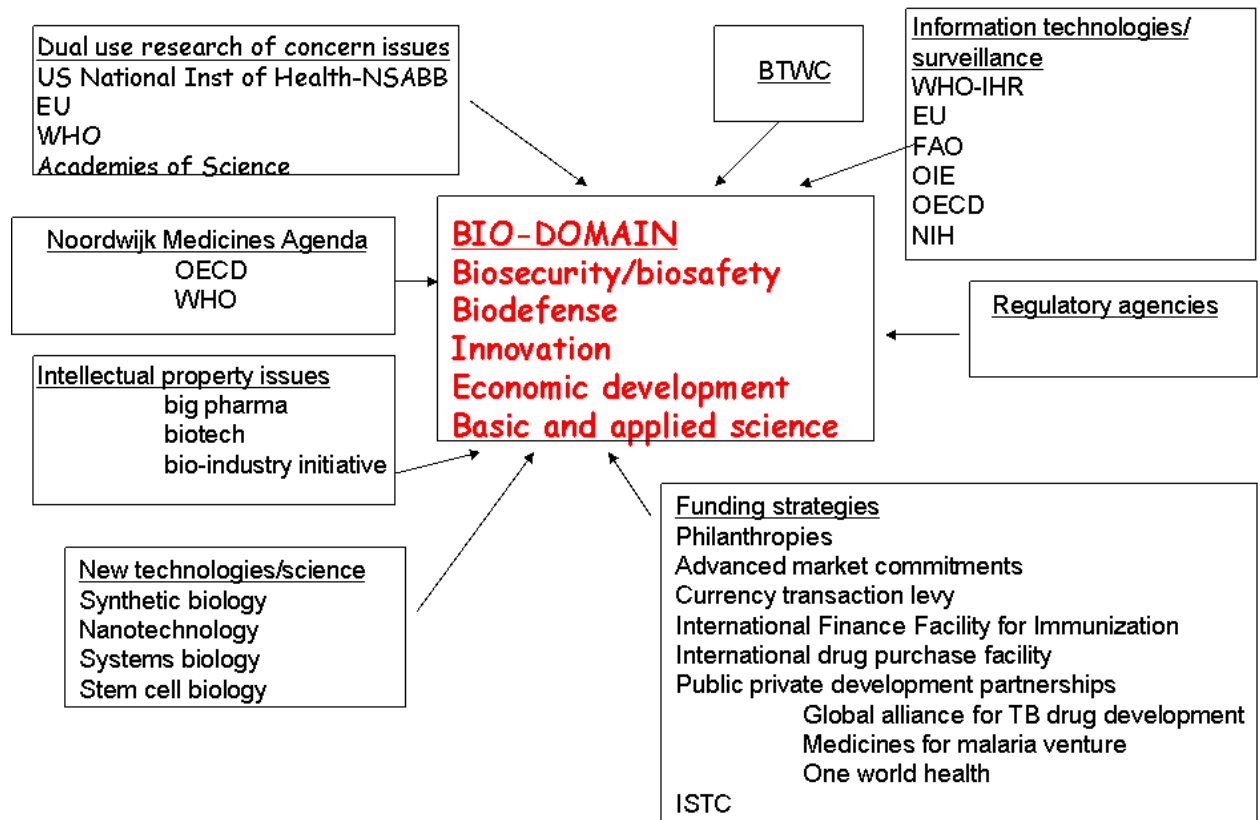
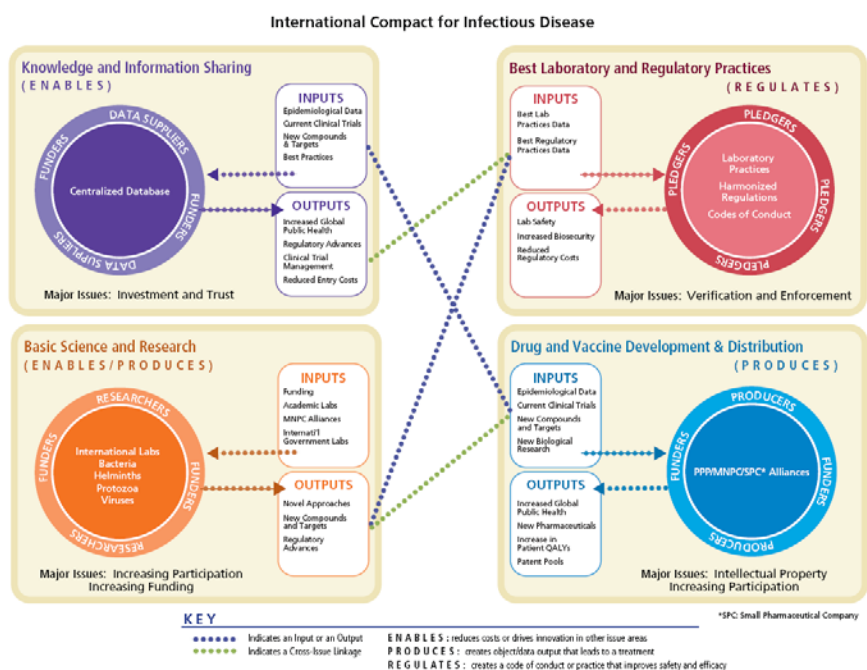


FIGURE 1



6. What role does your organisation play in combating the four diseases? Do you believe that it is correctly configured and adequately resourced to do the job? With which other organisations do you collaborate? How would you assess the degree of synergy?

Our work is divided into three components-the first is quite local, I have a clinical practice specializing in infectious diseases in a major teaching hospital in the US (The University of Pennsylvania Health System),

secondly my laboratory investigates the molecular mechanism of latency and dormancy in tuberculosis; it is funded by the US National Institutes of Health, the US National Science Foundation, and the Global Alliance for TB Drug Development. In general, the NIH funding has been flat for several years and additional resources must be found to expand their funding for basic research in infectious diseases. Public-private partnerships, such as the Global Alliance play an extremely important role in supporting new research and development in this domain; these organizations should be expanded and strengthened with additional resources contributed by governmental agencies. Third, we are involved in proposing far reaching policy recommendations, such as the Global Compact for Infectious Diseases discussed above. We have had excellent cooperation from organizations such as OECD but we need more complete cooperation and support from States parties. The UK government can play a central role in this global endeavour.

7. What are the main non-health causes (eg global warming, poverty, changes in land use, international travel, lifestyle, population) of the spread of the four diseases? To what extent can intergovernmental action in non-health fields contribute to alleviation of their spread? What action is taking place or planned in these areas? And what more needs to be done? Do you consider that there is sufficient 'joined-up' thinking in approaching the problem?

These non-health causes are enumerated in response to question 1. There is no question that the health and non-health factors are intimately linked and intergovernmental actions in these so called non-health domains are essential for an integrated attack on the problem of communicable diseases. At the current time, joined-up or integrated thinking is not happening; there are too many stove-piped approaches. As discussed above, we propose to bring these components together under a common, enforceable Global Compact for Infectious Diseases. Eventually States parties must be involved but our efforts will start with NGOs, academic centres and industry.

8. Cases of Tuberculosis fell progressively in the UK until the mid-1980s but started to rise again in the early 1990s. Around 6,500 cases are now reported each year, an increase of about a quarter since the early 1990s. What are the main factors of the revival of Tuberculosis infections in Britain? And how could intergovernmental action help to reverse the trend?

This is now fairly well studied. A recent paper (Clin Infect Dis. 2007 May 15;44(10):1261-7.) shows that the increase is secondary to immigrant populations-- "Between 1999 and 2003, overall tuberculosis notification rates in the 25 EU countries decreased by 4% each year, down to 14 cases per 100,000 population in 2003, but Italy and the United Kingdom registered increases because of tuberculosis in immigrants. In 2003, EU countries reported 62,743 tuberculosis cases; of these, 76% were in persons who were previously untreated, 22% were in persons >64 years old, and 30% were in foreigners (the percentage in individual countries ranged from 2% to 75%)".

In addition, drug resistance is an increasingly global problem. Intensive screening, diagnostic evaluations, contact tracing and directly observed therapy are the hallmarks of essential governmental interventions.

9. Tuberculosis is potentially curable by long-term antimicrobial therapies. Yet the numbers of reported cases worldwide seem to be rising. Are the necessary

medicines not getting through to patients? What are the barriers to effective long-term therapy? Are we now seeing infections which stem from other conditions – eg HIV/AIDS? Or are there other reasons why a treatable disease should be spreading? How might intergovernmental action help to deal with this situation? Improvements are needed on a number of fronts—there is a pressing need for more medical professionals and ancillary medical personnel in the developing world, diagnostic infrastructure must be built, these will contribute to better surveillance data, improved drug distribution. Drug monitoring systems need to be put in place and need to be constantly evaluated for efficiency and efficacy, co-infections, poverty, and many of the issues raised in response to question 1 are in play here as well.

10. To what extent do you believe that the 2004 Stockholm Convention limiting the use of DDT against Malaria-carrying mosquitoes has been a factor of increases in the spread of the disease? Has any risk analysis been carried out comparing the relative dangers to human health posed by DDT and Malaria?

I do not have the data to make a judgment on the extent to which the 2004 Stockholm Convention on persistent organic pollutants contributes to the current incidence of malaria, however the World Health Organization is clear about their positive recommendation for the ongoing use of DDT for indoor residual spraying (IRS) in epidemic areas and in areas with constant and high malaria transmission, including throughout Africa (<http://www.who.int/mediacentre/news/releases/2006/pr50/en/print.html>) .

11. What intergovernmental action is planned or in hand for early detection of the transmission of Avian Flu from birds to humans and of human-to-human transmission in potential source countries? Is this proving sufficiently effective to prevent an Influenza pandemic? What more could be done?

Extensive surveillance for H5N1 is extant (please see response to Question 3). However surveillance is only one aspect of preventing a pandemic—data sharing is critical, appropriate contingency plans and availability of countermeasures are also necessary. It may be that H5N1 will not be the origin of the next influenza pandemic, there has never been a recorded pandemic with the H5N1 strain and it is altogether reasonable to assume that an H/N strain will emerge as the pandemic strain.

12. To what extent do you consider that the rise in infections in the four diseases is attributable to increased microbial resistance to antibiotics? What intergovernmental action is taking place in this area?

The data is clear that drug resistance in *Mycobacterium tuberculosis* and *P. falciparum* and *P. vivax* is on the rise.

13. In a number of countries, including the UK, there is a problem with hospital-acquired infections. What intergovernmental sharing of knowledge is taking place to help bring this problem under control?

This is a major problem in the US as well and is generating high level attention. To attack this problem, congressional leaders Senators Sherrod Brown (D-OH) and Orrin Hatch (R-UT) introduced the Strategies to Address Antimicrobial Resistance (STAAR) Act (S. 2313) on November 6, 2007. Representatives Jim Matheson (D-UT) and Michael Ferguson (R-NJ) introduced the House-version of the bill (H.R. 3697) on September 27,

2007. <http://www.idsociety.org/STAARAct.htm> . The state of Pennsylvania just announced that attacking antibiotic resistance will be one of the state's research priorities for 2008-2009.

I strongly support the STAAR bills and recommend that similar approaches be considered in the UK as well as other countries. The major components of the bill follow:

### **SECTION 3. ANTIMICROBIAL RESISTANCE TASK FORCE**

Congress established the interagency Antimicrobial Resistance Task Force in 1999 but authorization for the Task Force (Sec 319E, PHSA) expired in 2006. Created to coordinate federal efforts to combat antimicrobial resistance, the Task Force quickly developed the Public Health Action Plan to Combat Antimicrobial Resistance. Implementation of the plan, however, was not optimal because the Task Force had little authority or funding. There were no personnel dedicated to executing the plan; Task Force members all had full-time responsibilities in the federal health agencies.

#### **\*\*NEW: OFFICE OF ANTIMICROBIAL RESISTANCE AND ADVISORY BOARD\*\***

Section 3 builds on the work of the Antimicrobial Resistance Task Force by enhancing authority, funding, and personnel to execute a coordinated federal response to antimicrobial resistance. The Task Force is reauthorized to review all data and issues related to antimicrobial resistance, make recommendations on how to combat resistance in the United States and internationally, and integrate these efforts into the Public Health Action Plan to Combat Antimicrobial Resistance through periodic updates of the plan. An Office of Antimicrobial Resistance in the Department of Health and Human Services is created to supply the dedicated authority and personnel for this effort and to coordinate planning and implementation of efforts across federal agencies and departments. And because antimicrobial resistance is not simply a federal governmental issue, a Public Health Antimicrobial Advisory Board is created to allow outside experts from domestic and international health communities to contribute to the effort.

#### **\*\*NEW: ANTIMICROBIAL RESISTANCE RESEARCH STRATEGIC PLAN\*\***

This section also calls for the creation of a federal blueprint for antimicrobial resistance led by the National Institutes of Health and Centers for Disease Control and Prevention in collaboration with other federal agencies and the new Office of Antimicrobial Resistance.

Drafted in consultation with leading infectious diseases experts, including veterans of the Antimicrobial Resistance Task Force, Section 3 will take the hard work already done planning a comprehensive response to antimicrobial resistance, and furnish the tools necessary to execute that plan.

### **SECTION 4. COLLECTION OF ANTIMICROBIAL DRUG DATA.—**

There is a significant shortcoming in the United States regarding the collection and dissemination of data on the amount of antimicrobial products used in humans and animals. In contrast, such data is collected in Europe and made available to government experts there. This provision directs drug sponsors and appropriate government agencies to collect these data and share them with the Office of Antimicrobial Resistance as the central repository for such data to facilitate interagency planning on antimicrobial resistance.

### **SECTION 5. ANTIMICROBIAL RESISTANCE CLINICAL RESEARCH AND PUBLIC HEALTH NETWORK.—**

There is presently little capacity to rapidly and effectively monitor, assess and address the spread of new or particularly virulent resistant microbes. Section 5 addresses this problem by establishing a sentinel surveillance system through CDC encompassing at least 10 geographically-distributed sites to track and confirm in near real time the emergence of resistant pathogens. Further, with CDC's and the National Institutes of Health's (NIH) support, these 10 or more sites will conduct research (including epidemiological, interventional, basic, and clinical research) to study the development of antimicrobial resistance and enhance our capacity to prevent, control and treat resistant organisms. Finally, this provision establishes a national isolate collection capacity under which CDC would serve as a national repository for samples of emerging pathogens with a focus on pathogens that show new or atypical patterns of resistance.

### **SECTION 6. ANTIMICROBIAL RESISTANCE QUALITY MEASURES DEMO PROJECTS.—**

This provision directs the Office of Antimicrobial Resistance to award grants to establish demonstration projects with the goals of better understanding the scope of the antimicrobial resistance problem, decreasing inappropriate antimicrobial drug use, and validating evidence necessary to establish quality measures related to antibiotic prescribing. The demonstration projects will have particular emphasis in important areas infectious disease experts have identified as requiring more information.

### **SECTION 7. GAO REPORT.—**

This provision requires that the Government Accountability Office of the United States submit a report by 2012 measuring the successes and failures of this Title in improving the ability to monitor, prevent the spread of, and otherwise limit the impact of antimicrobial resistance on human health.

**Funding Authorization:** The STAAR Act authorizes new funding to support the federal

response to antimicrobial resistance. This funding includes: \$45 million in 2006; \$65 million in 2009; \$120 million in 2010 and such sums as may be necessary for subsequent years. .

14. Are there any difficulties with regard to patents or intellectual property which are impeding the flow of medicines or other control methods to those infected? Is intergovernmental action needed to improve the situation?

Unfortunately intellectual property rights still stand at the centre of the discussion over discovery, development and distribution of antimicrobial agents and technologies. There is no question that intergovernmental action is needed to break down this barrier. A number of solutions have been presented and can be found in 1) Carl Nathan *Nature Medicine* March 2007. Aligning Pharmaceutical Innovation with Medical Need. 13(3):304-8 and 2) A Breakthrough in R&D for Neglected Diseases: New Ways to Get the Drugs We Need\_Mary Moran *PLoS Medicine* Vol. 2, No. 9, e302 doi:10.1371/journal.pmed.0020302.

15. What interchange exists between States in regard to knowledge of and training in the diagnosis and treatment of the four diseases or regarding preparations for dealing with outbreaks? What improvements might be made through intergovernmental action?

I will defer responding to this question because it is best answered by those who have more data than I.

16. The International Health Regulations 2005 are intended to provide a global framework for the rapid identification and containment of public health emergencies. How effective do you consider this response system to be? Do improvements need to be made?

The new IHRs are a step in the right direction. It is too soon to tell if it will make an important impact. The problem with IHRs reflect the problems associated with all surveillance systems as I discussed above.

17. What intergovernmental planning has been undertaken to cope with the impact of an outbreak of infectious disease caused by deliberate release of micro-organisms into the environment? Is there adequate liaison between the various agencies involved, including intelligence, law enforcement and health care professionals? How could action by intergovernmental bodies help further?

This is an emerging threat that needs a great deal of attention from the scientific community, governmental agencies, NGOs as well as the law enforcement and intelligence communities. There is a dearth of cooperation among these groups at this time which is a major flaw in national as well as international strategies. We recently addressed this problem in an international meeting held at Lake Como, Italy which were presented to the 2007 Biological Weapons Convention meeting of states parties . Here are our recommendations:

Statement on Improving Global Biosecurity  
Presented to the BWC 2007 Meeting of States Parties  
By the  
Partnership for Global Security  
December 10, 2007

The forces of technological and economic globalization have radically altered the nature of the biological challenges the world faces. There is general agreement on the need for improved global biosecurity, but there is currently no consensus on how to design or implement it. New approaches are needed to develop a stronger, more flexible biological security strategy that can adapt to the

rapid pace of technological and economic changes and include all stakeholders. There are several key issues to be considered in building a consensus for this enhanced global biosecurity system. A successful approach to improved global biosecurity will have to balance the need for adequate controls with flexible mechanisms. The goals should be to mitigate risk, increase confidence in bio-activities, and limit intrusiveness to that research which is truly dangerous. Any improvements in this area must account for the fact that the majority of research, activities and applications are beneficial and therefore the emphasis must be on minimizing the dangers without hindering the wide-ranging benefits of bio research.

The majority of biological materials and most research are controlled by the private sector. Unfortunately, to date the participation of this sector in the dialogue on how to improve global biosecurity has not been commensurate with its dominance in the field. Eighty percent of the world's biotechnology companies are privately held. Revenues for the world's 710 publicly traded companies in 2006 totaled \$73.4 billion, or 14% growth over 2005. Therefore, because the private sector plays a dominant role in the advancement of the life sciences it must be better integrated into the discussion of global biosecurity.

Another major challenge is harmonizing global biosecurity regulations and oversight. Currently more than 40 nations are involved in biotechnology and life sciences research and development. However, there is a lack of consistency around the globe in biosecurity regulation, oversight, standards, and facility transparency. Creating a balanced approach is the key to success. In the near term much more could be done on a voluntary basis by the private sector and governments. A voluntary and balanced approach could allow for the creation of uniform security standards, practices, and procedures in the developed world. For example the biosecurity standards and practices in most OECD countries are not that different and their common characteristics could be informally codified. These could then be endorsed through industry or trade organizations or intergovernmental organizations. The biotech industries in the developing world then could be encouraged and assisted to work toward these levels.

Another significant challenge is the need to coordinate and facilitate communication and knowledge sharing among the broad range of stakeholder communities. In this regard, PGS proposes that the states parties to the Biological and Toxin Weapon Convention endorse the creation of a yearly global convention on biosecurity that would involve all relevant stakeholders. Such a global conference would facilitate the goal of establishing harmonized global biosecurity norms and allow for the interdisciplinary coordination and information sharing that are now lacking.

#### **Priority Actions**

To help achieve this new level of biosecurity this statement endorses the five priorities for urgent action by the international community that were proposed in November 2007. Titled the "Consensus Statement of Priority Actions for the Promotion of Global Biosecurity," it was endorsed by six biological security policy and technical experts: Kenneth N. Luongo, Executive Director of the Partnership for Global Security; Maurizio Martellini, Secretary General of the Landau Network-Centro Volta; Gerald Epstein and David Heyman, Co-directors of the Biological Threat Reduction Forum at the Center for Strategic and International Studies; **Harvey Rubin, Professor of Medicine, Microbiology, and Computer Science at the University of Pennsylvania**; and Barry Kellman, Professor of Law at DePaul University.

##### **• Sharing Baseline Information**

Development of a baseline of information on global biological holdings, research facilities, and infectious disease patterns. Specifically this could include identification and alignment of all existing global databases of pathogen stockpiles, research facility and collection storage locations, inventories of biological materials and equipment, and infectious disease monitoring and patterns. This network should be connected and integrated by an information technology architecture that will allow it to be utilized for the benefit of global public health and security while protecting sensitive and proprietary information.

##### **• Education and Awareness Raising Promotion**

Greater education and heightened awareness promotion on the nature of the biological threat in the scientific, academic, and policy communities. The potential for the accidental or intentional misapplication of biological technology needs to be recognized while protecting the enormous benefits the life sciences provide to humankind.

##### **• Interdisciplinary Coordination**

Interdisciplinary coordination and information-sharing in support of the improvement of global biosecurity. The threat posed by the misapplication of the life sciences cuts across numerous sectors, including public health, science, technology, law enforcement, and private industry. Therefore greater cross-communication among the diverse stakeholder sectors is essential to improve information flow and promote awareness of the concerns and major issues in each sector. Yearly global conventions on global biosecurity featuring a broad cross section of life sciences stakeholders should be convened.

##### **• Engaging the Private Sector**

Engaging in a dialogue with the private sector on the risks posed by the potential misapplication of biological materials and advanced scientific techniques while emphasizing the need to protect the scientific and economic value created in the biotechnology and life sciences fields. This dialogue

must advance – not hinder – the vast benefits biotechnology can contribute to the promotion of public health and raise the quality of life globally.

- **Promoting Compliance with Harmonized Standards and Practices**

Development and acceptance of globally harmonized biosecurity standards, improved gathering of intelligence, and better integration of law enforcement to enhance the quality, rapidity, and effectiveness of efforts to prevent and respond to biological dangers.

18. Though our remit is focused specifically on known infectious diseases, we would be interested to know how you view the global threat from new or previously unrecognised ones and from the transmission of infections from animals to humans.

There is an enormous database confirming that there is a significant global threat from new or previously unrecognised infectious diseases and from the transmission of infections from animals to humans. The issue should not be left unaddressed by the Committee.

19. What resources (subscriptions, staff, training, medicines etc) does the UK Government commit to intergovernmental bodies to help in the fight against the four diseases listed?

I do not have the information necessary to adequately respond to this important question.

20. Do you wish to provide any other relevant information in addition to what you have said in answer to the above?

I think I may have already exhausted the Committee with the above responses. I am happy to discuss these issues in person with the Committee if the Committee would find that helpful.

### *Guidance for Those Submitting Evidence*

Submissions of evidence should be sent to:

Robert Preston  
Clerk to the Ad Hoc Committee on Intergovernmental Organisations  
House of Lords  
London SW1A 0PW

Tel. (020) 7219 3330

Email: [AHCIO@parliament.uk](mailto:AHCIO@parliament.uk)

Emailed submissions in Word format are preferred.

The deadline for receipt of submissions of written evidence is **Monday 21 January 2008**. Please ensure, when submitting evidence, that you include relevant contact details, that your evidence is dated and that you make clear whether it is submitted on a personal basis or behalf of an organisation.

Short submissions (not exceeding 6 pages of A4 paper) are preferred. Longer submissions, where these are judged necessary, should be accompanied by a summary. Paragraphs should be numbered and it would be helpful, when commenting on the issues raised above, if reference is made to the number shown against each one.

If drawings or charts are included, these should be black and white and of camera-ready quality.

All evidence submitted becomes the property of the Committee and may be printed and published. You may publish your evidence yourself, but in doing so you should indicate that it was prepared for the Committee.

The Committee will invite some of those submitting written evidence to appear before it in order to give oral evidence, usually at Westminster and in public session, though in the case of submissions from overseas, Select Committees sometimes visit the organisations concerned. Oral evidence is expected to be taken between February and May 2008.

This is a public Call for Evidence which is being displayed on the Committee's website. A list of those organisations being approached is at Annex. If you consider that there are other bodies than those indicated who should be asked to contribute, please let us know. It is also open to any individual to submit written evidence on his or her own account, subject to the guidance set out above.

10 December 2007

ROBERT PRESTON  
Clerk to the Committee  
Tel. (020) 7219 3330  
Email:prestonr@parliament.uk

### **Annex**

This Call for Evidence has been sent to:

#### **UK-Based Recipients**

Academy of Medical Sciences  
Academy of the Medical Royal Colleges  
ActionAid UK

Association of Port Health Authorities  
Association of the British Pharmaceutical Industry (ABPI)  
Children With AIDS  
Department for the Environment, Food and Rural Affairs (Surveillance, Epidemiology and Risk Division)  
Department of Health (Directorate of International Affairs)  
Department for International Development (Health Professional Group)  
Foreign and Commonwealth Office (International Organisations Department)  
Health and Safety Executive  
Health Protection Agency

- Chief Executive
- Centre for Infections

Imperial College London

- Department of Infectious Disease Epidemiology
- National Heart and Lung Institute (Chair in Infectious Diseases)

Interact Worldwide  
International Alliance of Patients' Organisations (IAPO)  
International Maritime Organisation  
LACORS  
Liverpool School of Tropical Medicine (Director)  
London School of Hygiene and Tropical Medicine

- Director
- Centre for Global Health and Change
- Communicable Diseases Policy Research Group

Malaria Consortium  
Medical Research Council  
Medicines and Healthcare Products Regulatory Agency  
Merlin  
Norfolk and Norwich University Hospital Trust  
Oxfam  
Results UK  
Royal College of Physicians (President)  
Save the Children  
Target TB  
TB Alert  
Terrence Higgins Trust  
Tropical Health and Education Trust  
United Nations Association UK  
University College London

- Department of Epidemiology and Public Health
- Centre for Infectious Disease Epidemiology

University of Oxford

- Institute of Emergent Infections of Humans

Wellcome Trust

### **Overseas-Based Recipients**

Action Aid International  
African Union  
Bill and Melinda Gates Foundation  
Council of Europe (Health Division)

European Centre for Disease Prevention and Control  
 European Federation of Pharmaceutical Industries and Associations (EFPIA)  
 GAVI  
 Global Business Coalition on HIV/AIDS, Tuberculosis and Malaria  
 Global Fund to Fight AIDS, Tuberculosis and Malaria  
 Graduate Institute of International Studies  
 Intergovernmental Forum on Chemical Safety  
 International Civil Aviation Organisation (ICAO)  
 International Committee of the Red Cross (President)  
 International Committee of the Red Cross (Director)  
 International Federation of Pharmaceutical Manufacturers & Associations (IFPMA)  
 International Labour Office (AIDS Directorate)  
 International Organization for Migration (IOM)  
 International Pharmaceutical Federation (FIP)  
 International Union Against TB and Lung Diseases  
 Médecins Sans Frontières  
 Minister of Foreign Affairs (France)  
 Norwegian Ministry of Foreign Affairs  
 Organisation for Economic Co-operation and Development (OECD)  
 Pan American Health Organisation  
 SAARC Tuberculosis and HIV/AIDS Centre  
 Swiss Federal Office of Public Health (FOPH) (Head of Int Affairs)  
 Swiss Federal Office of Public Health (FOPH) (Director)  
 UN Children's Fund  
 UN Department of Economic and Social Affairs  
 UN Development Programme  
 UN Division for the Advancement of Women  
 UN Environment Programme (Under-Secretary General)  
 UN Food and Agriculture Organisation (FAO)  
 UN High Commissioner for Refugees  
 UN Office on Drugs and Crime (Executive Director)  
 UN Office on Drugs and Crime (HIV/AIDS Unit)  
 UN Population Fund (HIV/AIDS Branch)  
 UN Population Fund (Under-Secretary General)  
 UNAIDS (Under-Secretary General)  
 US Centers for Disease Control and Prevention  
 WHO (Communicable Disease Surveillance and Response Centre)  
 WHO (Communicable Diseases Division)  
 WHO (Department of Epidemic and Pandemic Alert and Response)  
 WHO (Global Outbreak and Response Network)  
 World Bank (Global HIV/AIDS Program)  
 World Health Organisation (Directorate-General)  
 World Intellectual Property Organization (WIPO)  
 World Organisation for Animal Health (OIE)  
 World Trade Organisation

<sup>i</sup> T.W. Pogge, Human Rights and Global Health: A Research Program. *Metaphilosophy*, Vol. 36, Nos. 1/2, January 2005. pp. 1-2

<sup>ii</sup> L.O. Gostin. Meeting Basic Survival Needs of the World's Least Healthy People Toward a Framework Convention on Global Health; Inaugural Lecture for the Investiture of the Linda D. and Timothy J. O'Neill Professor of Global Health Law. April 19, 2007.

<sup>iii</sup> I. Kickbusch. A Wake-Up Call for Global Health, *International Herald Tribune* April 29, 2003. Cited in M. Selgelid, *Ethics and Infectious Disease*, *Bioethics* Vol. 19, Number 3, 2005

<sup>iv</sup> A Potential Influenza Pandemic: Possible Macroeconomic Effects and Policy Issues, Report Presented to the Congressional Budget Office December 8, 2005; revised July 27, 2006.

<http://www.cbo.gov/ftpdocs/69xx/doc6946/12-08-BirdFlu.pdf>

<sup>v</sup> Bad Bugs, No Drugs, the Infectious Diseases Society of America, July 2004

<sup>vi</sup> G. J. Ikenberry and A. Slaughter, *Forging a World of Liberty Under Law: U.S. National Security in the 21st Century* <http://www.wps.princeton.edu/ppns/report/FinalReport.pdf>

<sup>vii</sup> We deliberately use the concept of “compact” in order to avoid the term “treaty” for many of the reasons discussed by Jean-François Rischard in *Global Issues Networks: Desperate Times Deserve Innovative Measures* THE WASHINGTON QUARTERLY \_ WINTER 2002-03, 26:1 pp. 17–33. We expect that the compact will have a structure resembling networked governance as described in Rischard’s paper. We also do not rule out on the alternatives, both legal and political.

<sup>viii</sup> See George W. Downs, David M. Locke, Peter N. Barsom, *Is the Good News about Compliance Good News about Cooperation?* International Organization, Vol. 50, No. 3 (Summer, 1996), pp. 379-406

<sup>ix</sup> See Rischard, Matthew, *Global Issues Networks: Desperate Times Deserve Innovative Measures*, The Washington Quarterly Vol. 26, No. 1 pp. 17-33 and *High Noon: We Need New Approaches to Global Problem-Solving, Fast*, J Int Economic Law 4: 507-525.

<sup>x</sup> [http://www.oecd.org/document/31/0,3343,en\\_2649\\_18532957\\_38202975\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/31/0,3343,en_2649_18532957_38202975_1_1_1_1,00.html) and comments found in Callan B, Gillespie I. The path to new medicines. *Nature*. 2007 Sep 13;449(7159):164-5.

<sup>xi</sup> <http://www.ransac.org/Projects/Biological%20Threat%20Reduction%20Project/index.asp>

<sup>xii</sup> <http://www.idsociety.org/Content.aspx?id=7000>

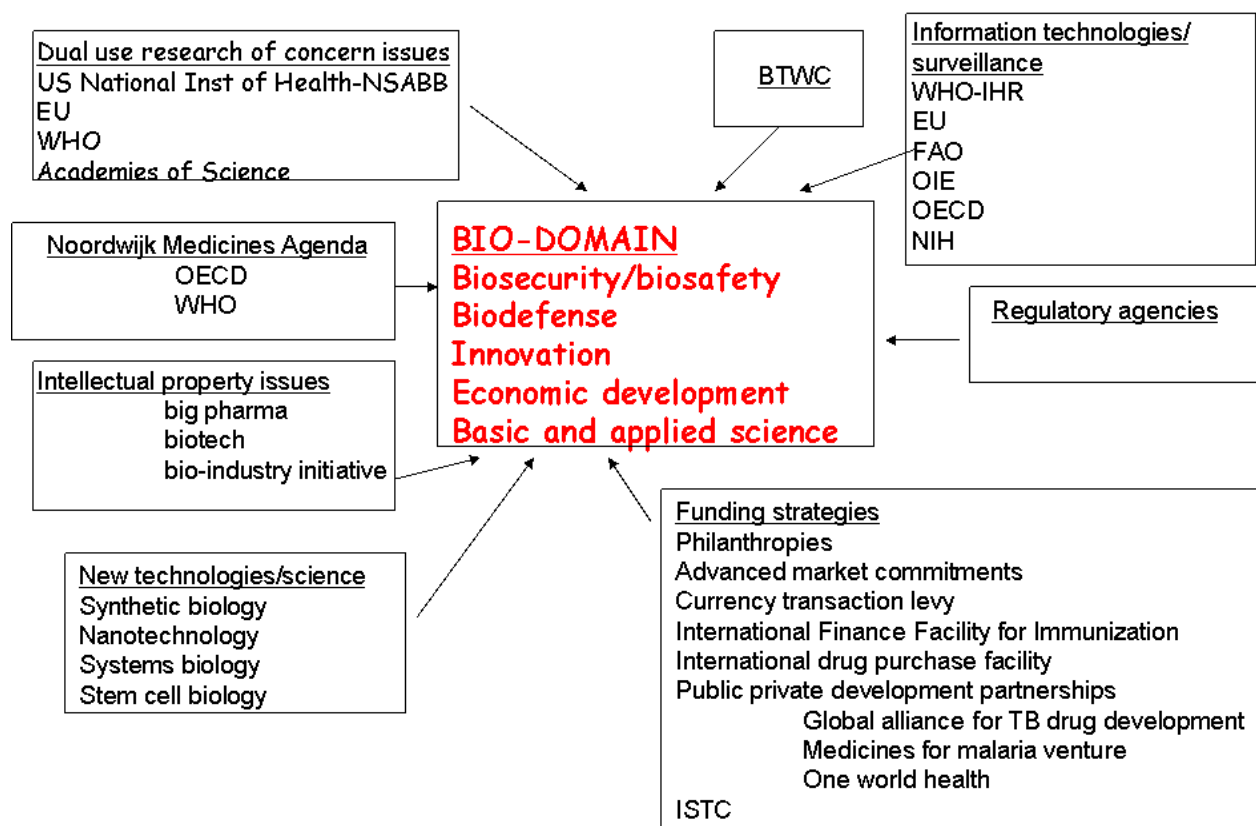


FIGURE 1

International Compact for Infectious Disease

