

Health security and public goods

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Contents Objectives

Definition of health security

Discuss multiple dimensions, and how they have come about

History

Paint a picture of how events since 14th century have shaped institutions related to health security

Theory of public goods

Understand some economic theory, giving examples and criticism

Governance and regulations

Show how governance is central to health security, explain strategies and case study of IHR

Donor Partners

Describe the global functions of ODA and funding, other DP initiatives and how ADB's GMS HS project aligns with theory

Definition of health security

**What is
'health
security'?**

HUMAN
SECURITY _____

HEALTH AND
SECURITY _____

INDIVIDUAL
HEALTH SECURITY _____

GLOBAL PUBLIC
HEALTH SECURITY _____

**“ There is no universally
agreed definition.**

Widespread but inconsistent use of the term
by global public health stakeholders with
widely divergent perceptions, priorities and
agendas has created confusion and mistrust.

Aldis (2008)

”

1994
U N D P

Human Development Report identified health as one of seven threats to **human security**

2001
Ministers

A meeting of ministers of Canada, France, Germany, Italy, Japan, UK, US and Mexico, **as a direct response to 9/11**, referring to **'health AND security'**

2002

Health security had turned into singular, interchangeable concept: policymakers saw harm whether intentional or not

2007
W H O

Public health security is defined as:

“ the activities required, both proactive and reactive, to minimise vulnerability to **acute public health events** that endanger the collective health of populations living across geographical regions and international boundaries. ”

(WHO World Health Report 2007)

Quiz!

How many SARS infections are there on average per year?

- 1) >1 billion
- 2) 100 million -1 billion
- 3) 1 million - 100 million
- 4) 50,000 - 1 million
- 5) <50,000

Quiz 2!

How many TB infections are there on average per year?

- 1) >1 billion
- 2) 100 million -1 billion
- 3) 1 million - 100 million
- 4) 50,000 - 1 million
- 5) <50,000

New(er) dimensions of health security

N C D

'threats' to health security/human security (with warfare like language, such as 'timebombs' or 'impending crises', and often globalisation is seen as the root cause)

3 contemporary challenges to disease containment:

1: Emerging/new diseases

rate of one per year for the past 30 years eg Ebola

2: Re-emerging diseases

Especially due to AMR, eg TB

3: Bioterrorism

Deliberate release of virus, bacteria or germs to cause illness and death eg Sarin in Tokyo 1995, anthrax letters post 9/11

Common theme
in all definitions:

'protection from threats to health'
(individual and collective)

The lack of comprehension and commonality sets
the stage for breakdown in global cooperation

History

Historic overview of health security-linked events

1348
|
1800s

Black Death killed 30-50% of population of W Europe, spread by traders

- catalyst for first major attempts to control movement of infected travellers and ships
- Practice of isolating potentially infected travellers for 40 days → ‘quarantine’ (Latin and Italian words for 40)
- 1403 – Venice has quarantine stations at major marine entry points
- 1527 – requirement of bill of health
- 1665 – bills of health internationally recognised
- 19th Century – most states had developed quarantine systems

1820
|
1907

Health councils established in middle east (Alexandria, Constantinople, Tangiers), triggered **10 international health conferences** in latter half of 19th century, first one attended by **12 states**

- First major global international health agreement, International Sanitary Regulations (**ISR**), in 1903
- First major global health institution, Office International d’Hygiene Publique (**OIHP**) 1907, tasked with monitoring and revising ISR

1907
|
1926

International Sanitary Regulations (ISR)

- to prevent spread of disease from developing to industrialized countries, and prevent national quarantine controls by non-industrialised states from impeding trade
- Regulations required states report disease outbreaks and treat infected travellers in accordance with specific standards
- Only referred to cholera, plague, then later yellow fever
- By 1926, 3 others added – relapsing fever, typhus, smallpox
- predecessor to International Health Regulation (IHR)

Meanwhile...

Late 19th
early 20th
centuries

Significant improvement in health infra

- sewage disposal, clean water

Major improvements in science

- vaccines and medicines (microscopes)
- 'the start of modern medicine'



Up to this point, more soldiers were killed by diseases than actual warfare

WW1
|
WW2

Huge progress in medical research

- malaria, pertussis, tetanus, TB

Boom in travel

- Planes, trains and automobiles



1923

League of Nations Health Organization (LNHO) created

- USA was not a member
- focused on gathering and sharing info on diseases in non-industrialized countries, and provided some TA

1948

WHO created

- as successor to OIHP and LNHO
- led to revision of ISR in 1951 and again in 1969, then retitled **IHR**



More medical progress in following years: 'drug for every bug'

1980s

Dominated by HIV/AIDS

- long way to go to eradicate infectious diseases



Theory of public goods

Why is health security a public good?

- *Intuitively:*
 - health security isn't something you pursue as an individual, but necessary for the good of the public
 - Shared gain from shared good
- Individuals receive the benefits of health security without contributing to the payment of the costs of producing those benefits
- Collective action is required

Private vs Public goods

'good'

physical commodities, services, technologies, information

'private good'

consumption can be withheld until payment is made, and once consumed cannot be consumed again. Eg cake.

- **excludable** (if you can't pay, you can't consume)
- **rival** (once consumed, others can't have it)



'public good'

once provided, no one can be excluded from consumption and one's consumption does not prevent anyone else from consuming them. Eg lighthouse, roads

- **non-excludable** (available to all)
- **non-rival** (consumption does not limit consumption by others)



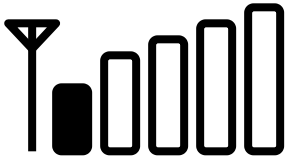
BUT, excludability and rivalry are relative concepts...between the extremes of public and private goods lie a range of **private goods with externality** ('third party', not direct consumer or producer) effects and **public goods with private benefits**. Classifications are theoretical; usually more appropriate to discuss the **degree** to which goods may be excludable or rivalrous

Non-excludability

Some public goods require 'club goods/access goods'
(eg. Telecoms)

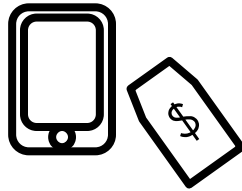
Shaped by...

Geography



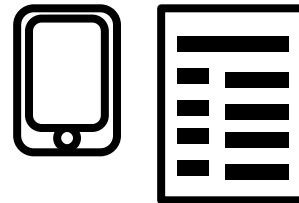
Poor mobile
signal

Indirect costs



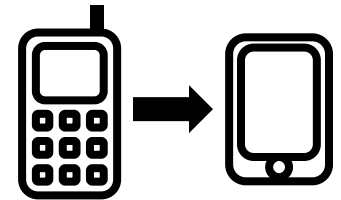
Cost of a phone

Administrative control



Mobile subscription

Changes in technology



From old to new
phone

Non-excludability means prices cannot be enforced/charged,
leading to **free-riding** (benefits without payment)

MARKET FAILURE

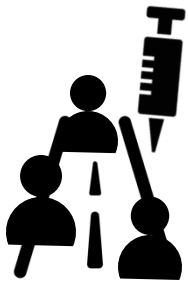
Non rivalry



Degree of rivalry is determined by capacity (eg roads)
Externalities → market failure

Non rival nature
of public goods
means...

in a free market, producers have less incentive to supply,
leading to **undersupply** and loss of welfare for society



Need for access goods restricts the benefits of public
goods, and can lead to perverse targeting. Access
goods could be supplied, or demand for them
stimulated (eg provide vaccines or info about them)...

...though this also creates its own access problem
(education and info themselves require access goods).

In some cases,

it is **cheaper/most beneficial** to just supply freely or
subsidize, esp. in the case of vaccines for infectious
disease control.

Examples of (mostly) public goods

NO

Health per se

One person's health status is a private good (he/she is the primary beneficiary), even though there may be externalities (benefits to others) resulting from it

The **goods and services** necessary to provide and sustain health are also often rival and excludable

YES

Prevention/containment

communicable disease (non-rival, but requires access goods)

Disease eradication

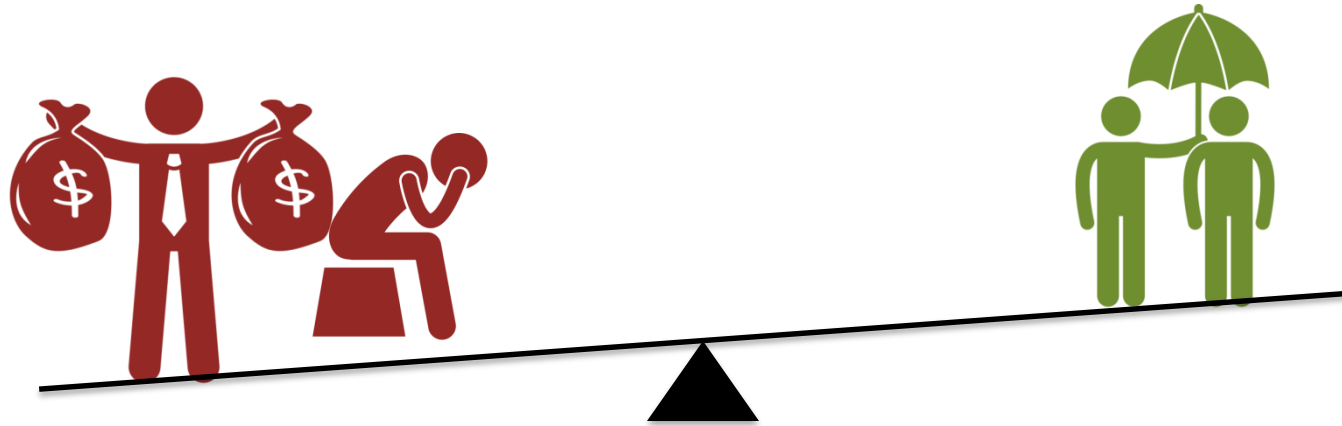
once eradicated globally, benefits are neither excludable nor rivalrous

Global Public Goods

- climate change (emission and ozone depletion)
- peace and security
- financial stability

Health Security elements

Criticism of public goods



Based on **welfarism**

- aims to maximize utility
- does not have much concern for equality or distribution (of power, wealth, health)
- concept of caring is missed, focusing on the individual self only

Is **communitarianism** a better alternative?

- place people and community at centre of value systems
- emphasize value in the community per se, and value in being part of the community
- Allows for altruism while recognizing differences across communities.

Governance

Regulations

Who provides public goods?

In a free market

lack of incentive
to produce public goods



undersupply

Exacerbated by
lack of coherent and strong
'global government'
(or 'governance') to regulate or
enforce production



- How to ensure collective action for health security at the international level?

lack of communication and information about each participant's actions and lack of enforcement mechanisms impede cooperation

Governance vs. government

Both refer to purposive behaviour, to goal-oriented activities, to systems of rule; but...



Governance



Government

- backed by **shared goals** that may or may not derive from legal and formally prescribed responsibilities that **do not necessarily rely on police powers** for compliance
- governance can be carried out by any range of actors, not just government
- **Informal agreements** and networks

- backed by **formal authority**
- **Contracts, assurances**

(Rosenau 1992)

Health governance has got increasingly sophisticated

Pre 1990s

Main vehicle for disease reporting was **Weekly Epidemiological Record (WER)**, by OIHP

1993

Program for Monitoring Emerging Diseases (PROMED): an electronically linked network of health professionals in the world (**internet based disease reporting**)

1997

Canadian gvt – Global Public Health Intelligence Network (GPHIN) with WHO – monitor **media sources** for info on outbreaks and threats

US DoD links **armies and navies** throughout the world: Global Emerging Infections Surveillance and Response System (GEIS)

R. H. 38. Genève, le 17 décembre 1926.
Geneva, December 17th, 1926.

SECTION D'HYGIÈNE DU SECRETARIAT DE LA SOCIÉTÉ DES NATIONS
HEALTH SECTION OF THE SECRETARIAT OF THE LEAGUE OF NATIONS

RELEVÉ HEBDOMADAIRE N° 38 des rapports concernant la peste, le choléra, la fièvre jaune, le typhus exanthématique et la variole reçus par la Section d'hygiène pendant la semaine se terminant le 16 décembre 1926.

WEEKLY RECORD No. 38 of Reports regarding the Prevalence of Plague, Cholera, Yellow Fever, Typhus and Smallpox received by the Health Section during the Week ended December 16th, 1926.

A. RAPPORT TÉLÉGRAPHIQUE N° 90 REÇU DU BUREAU D'ORIENT DE SINGAPOUR POUR LA SEMAINE FINISSANT À MINUIT LE SAMEDI 11 DÉCEMBRE 1926.

A. TELEGRAPHIC REPORT No. 90 FROM THE EASTERN BUREAU AT SINGAPORE FOR WEEK ENDED MIDNIGHT, SATURDAY, DECEMBER 11TH, 1926.

VILLES MARITIMES	PESTE - PLAGUE		CHOLERA		VARIOLE SMALLPOX		MARITIME TOWNS
	Cas Cases	Décès Deaths	Cas Cases	Décès Deaths	Cas Cases	Décès Deaths	
Indes Britanniques : Bombay	—	0	—	0	5	5	British India: Bombay
Canton	—	0	—	0	60	60	Canton

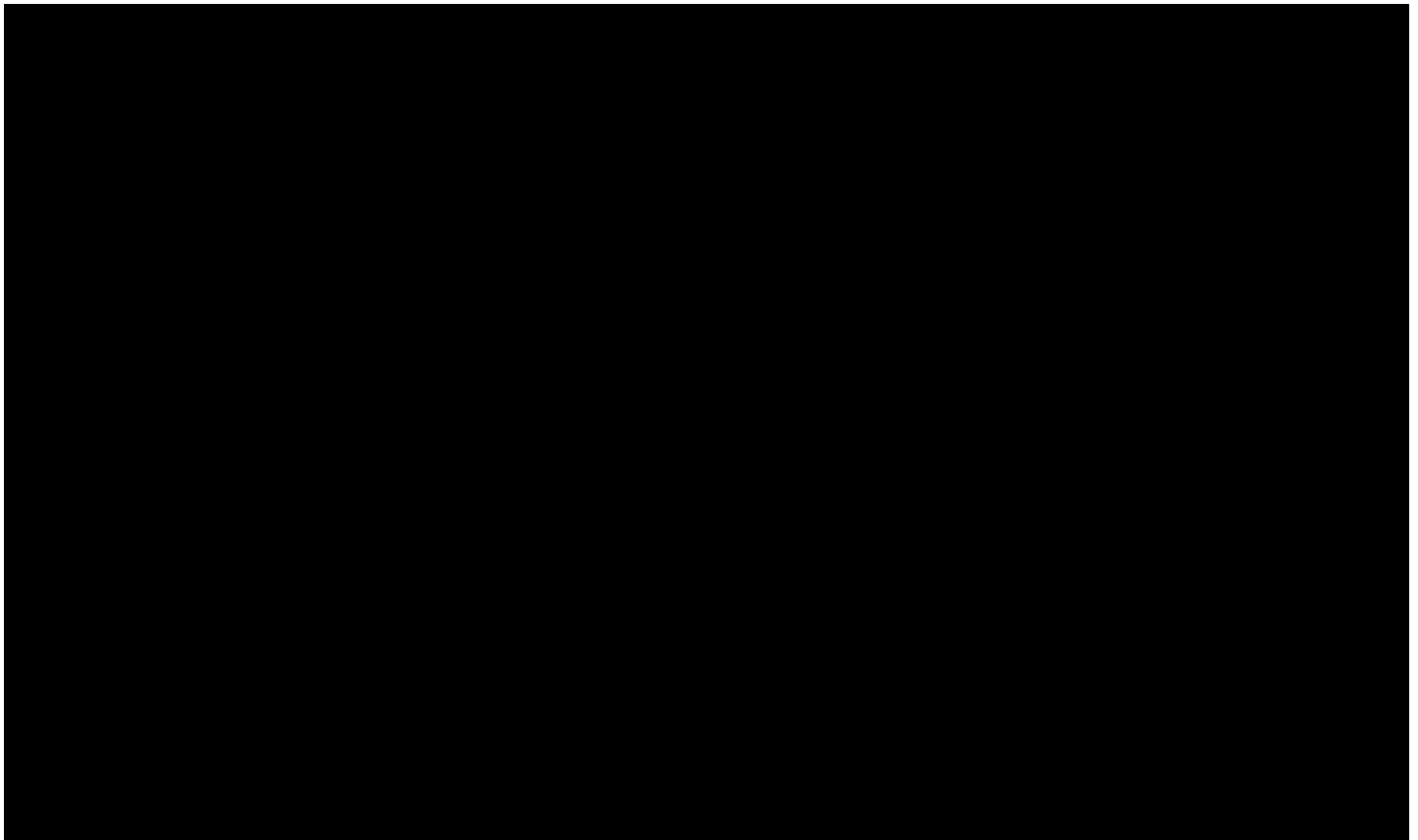


2000

Global Outbreak Alert and Response Network (GOARN) set up by WHO

- collaboration of institutions and networks, constantly alert and ready to respond
- pools human and technical resources for rapid identification, confirmation and response to outbreaks

http://video.who.int/streaming/eprfilms/Global_Alert_Global_Response.wmv



Regulations to counter market failure

Agreements 'to help the international community prevent and respond to acute public health risks that have the potential to cross borders and threaten people worldwide'

IHR 1998

Change from seeking to control the spread of diseases at **point of entry** to reducing the incidence of diseases **within bounded territories** (labs, treatment, use of tech)

Change from specifically named diseases, to **syndromic** (eg. acute haemorrhagic fever, acute respiratory, neurological, other notifiable diseases)

IHR 2005

3 main functions:

- Alert/notification function - national focal points
- Coordination of international actors for control
- Restrain over-reaction at quarantine or trade barriers

Expand focus from "quarantinable" diseases to **any emergency** with international repercussions for health

Increasingly health centric (not trade) and proactive



Sovereignty problem:

nations are guided by international regulations which may transcend nations'

Noncompliance:

Not treated as legally binding, often saw IHR as 'enhancing the probability of compliance with the rules'

Disagreement on rules:

some countries want stricter rules, others want less strict

No real enforcement mechanism:

weak incentive for countries to notify WHO of outbreaks for fear of embargos or isolation

Technical capacity :

in measuring data and handling information

Indonesia avian flu 2007 - virus samples had been sent without permission to a national security lab (not public health lab) in USA; Indonesia accused US of trying to develop a biological weapon. Also concerned about commercial exploitation (being charged high prices for any future vaccines or cures developed) '**viral sovereignty**'

Donor Partners

DPs' collective action for health security

'Global functions' of health ODA

Provision of global public goods
(R&D for diseases of poverty)

Management of externalities (eg pandemic preparedness)

Fostering leadership and stewardship (eg global priority setting, rule setting).

Distinct from country specific functions such as direct ODA for infectious disease control or HSS.

Funding is shrinking

only 21% of G7 health ODA is spent on **global functions** (\$3.6 of \$17.6 billion)

shrunk by **half** WHO's core budget for outbreak response between 2012-2013 and 2014-2015

Needs

\$6 billion annually to support R&D for neglected diseases

Selected Health Security Initiatives



Pandemic Emergency Facility

- Post outbreak fund

Health Security TA



Global Health Security Agenda (CDC/USAID)

- Multilateral/-sectoral approach to strengthen global capacity and nations' capacity to prevent, detect, and respond

CEPI

Coalition for Epidemic Preparedness Innovations

- \$500 million for development of vaccines against Lassa fever, Nipah virus and MERS and improving the latest DNA and RNA vaccine technology



PRINCE MAHIDOL
AWARD CONFERENCE

2018 theme: 'Making the World Safe from the Threats of Emerging Infectious Diseases' (zoonosis and AMR)

ADB - GMS health security

Community-based approaches using health systems strengthening framework

Component 1:

Regional cooperation and CDC in borders

- Information sharing
- Regional capacity for CDC
- CDC services in borders and for MMP



Governance
(RCU/RSC)

Component 2:

Disease S&R systems strengthened

- Community level reporting and preparedness
- Disease surveillance systems (clinical, lab, quarantine, web based)
- Equipment



Communities

Component 3:

Lab services and infection prevention and control

- Biosafety
- Staff training, Standard Operating Procedures
- Quality assurance and audit

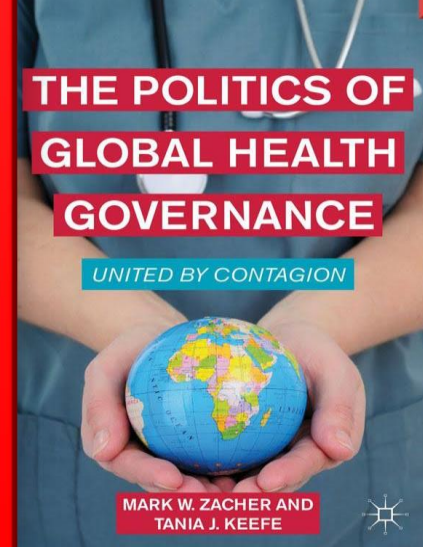
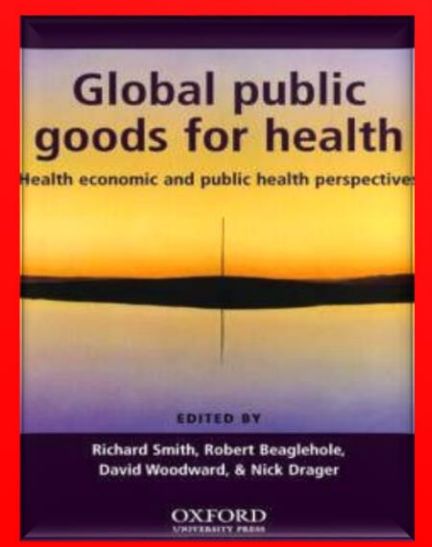
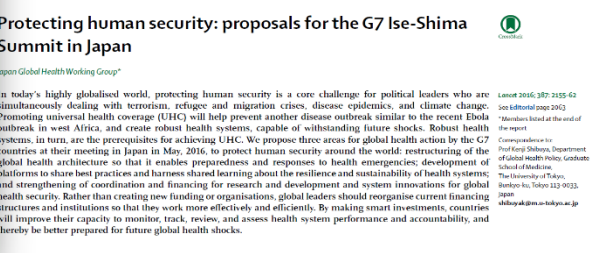
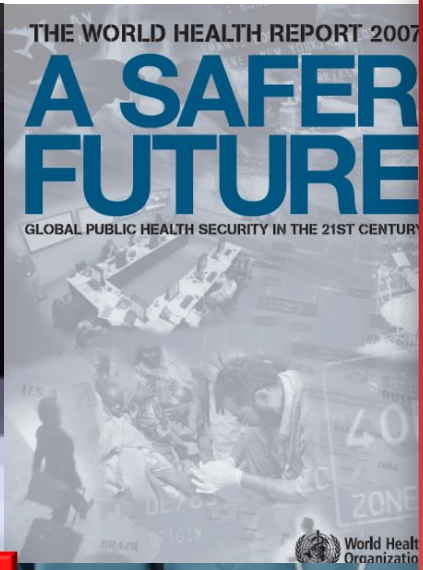


National
health systems

Key
takeaways

1. 'Health security' comes from many different sources and evolves over time
2. Historic events shape how institutions support health security today
3. Economic theory on public goods helps to understand key issues in health security provision
4. Effective governance / regulation goes half-way in solving the collective action problem
5. DPs play a critical role in fulfilling global functions of ODA

Selected references



Health security as a public health concept: a critical analysis

William Aldis

Accepted 18 June 2008

There is growing acceptance of the concept of health security. However, there are various and incompatible definitions, incomplete elaboration of the concept of health security in public health operational terms, and insufficient reconciliation of the health security concept with community-based primary health care. More important, there are major differences in understanding and use of the concept in different settings. Policymakers in industrialized countries emphasize protection of their populations especially against external threats, for example terrorism and pandemics; while health workers and policymakers in developing countries and within the United Nations system understand the term in a broader public health context. Indeed, the concept is used inconsistently within the UN agencies themselves, for example the World Health Organization's restrictive use of the term 'global health security'. Divergent understandings of 'health security' by WHO's member states, coupled with fears of hidden national security agendas, are leading to a breakdown of mechanisms for global cooperation such as the International Health Regulations. Some developing countries are beginning to doubt that internationally shared health surveillance data is used in their best interests. Resolution of these incompatible understandings is a global priority.

Keywords Health security, human security, bio-terrorism, World Health Organization, International Health Regulations, communicable disease control

Thank you!