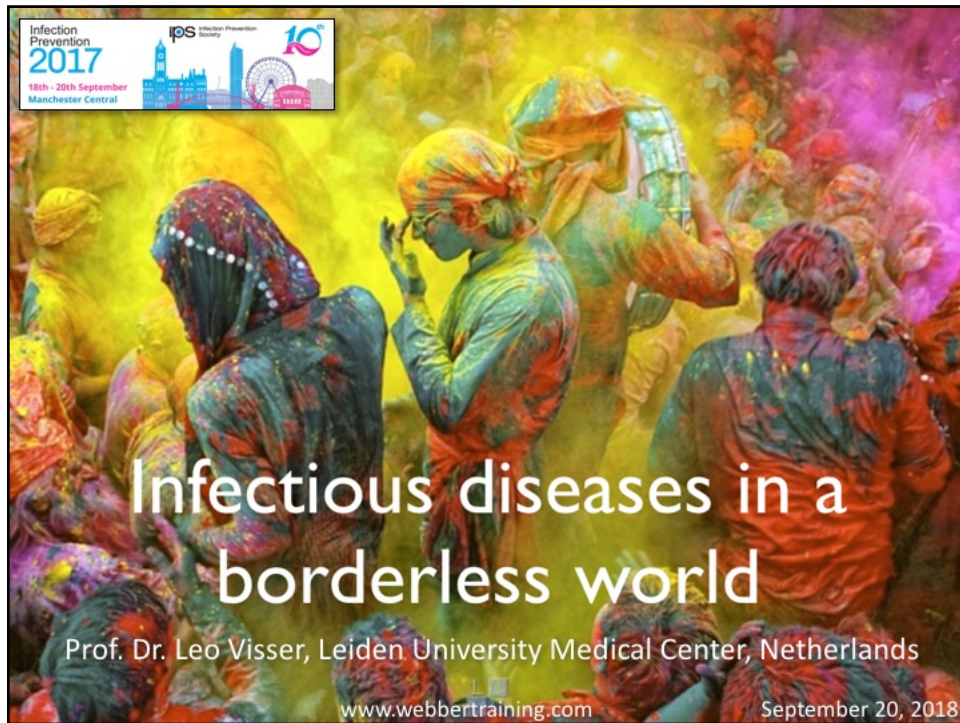
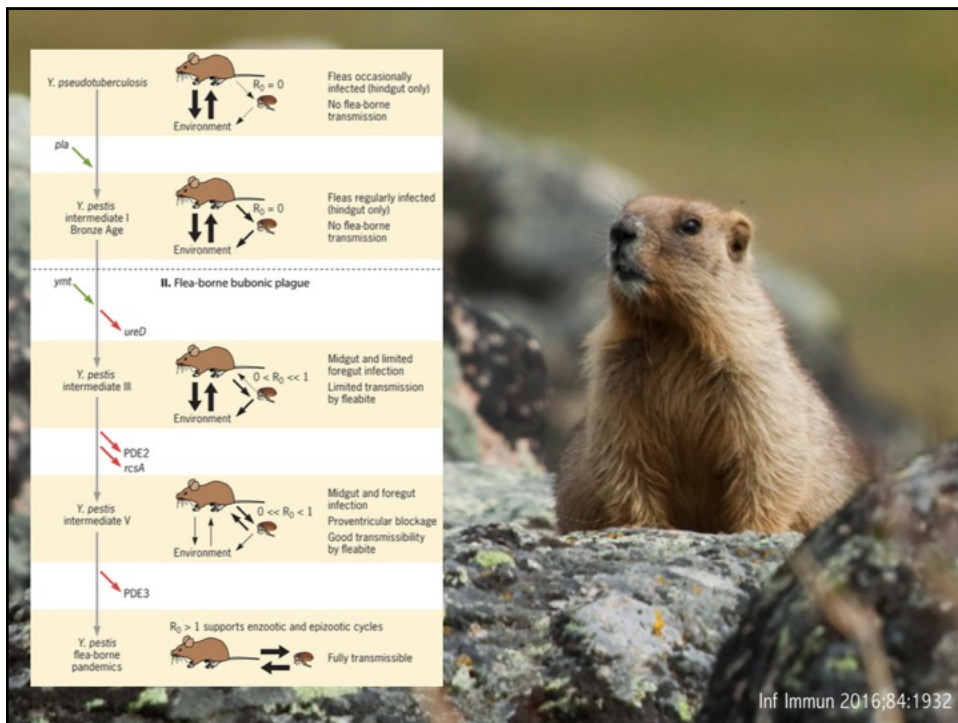


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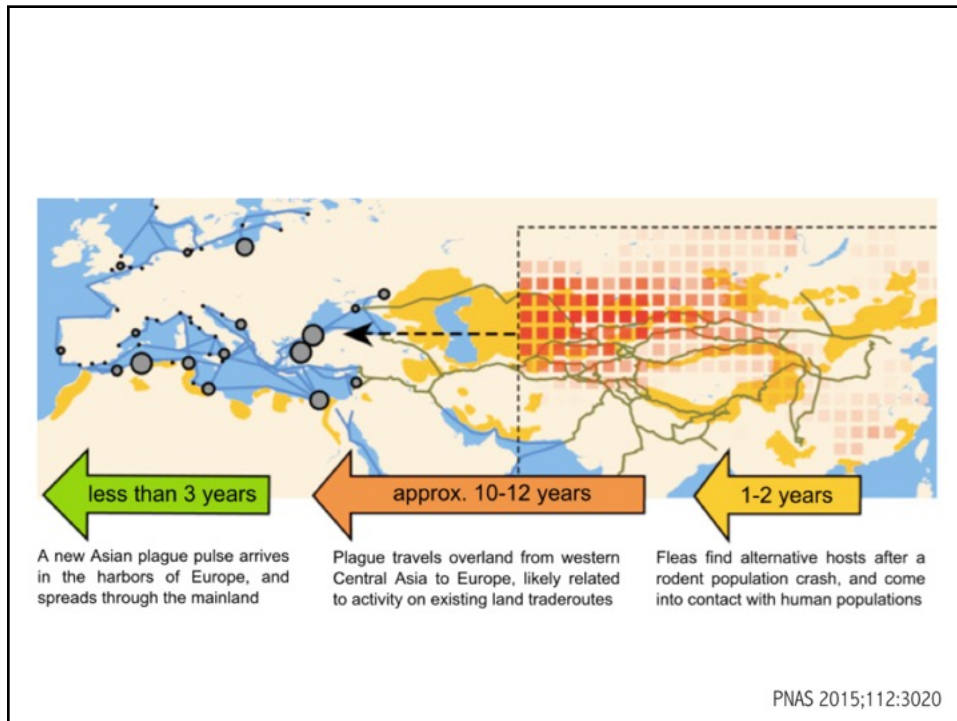
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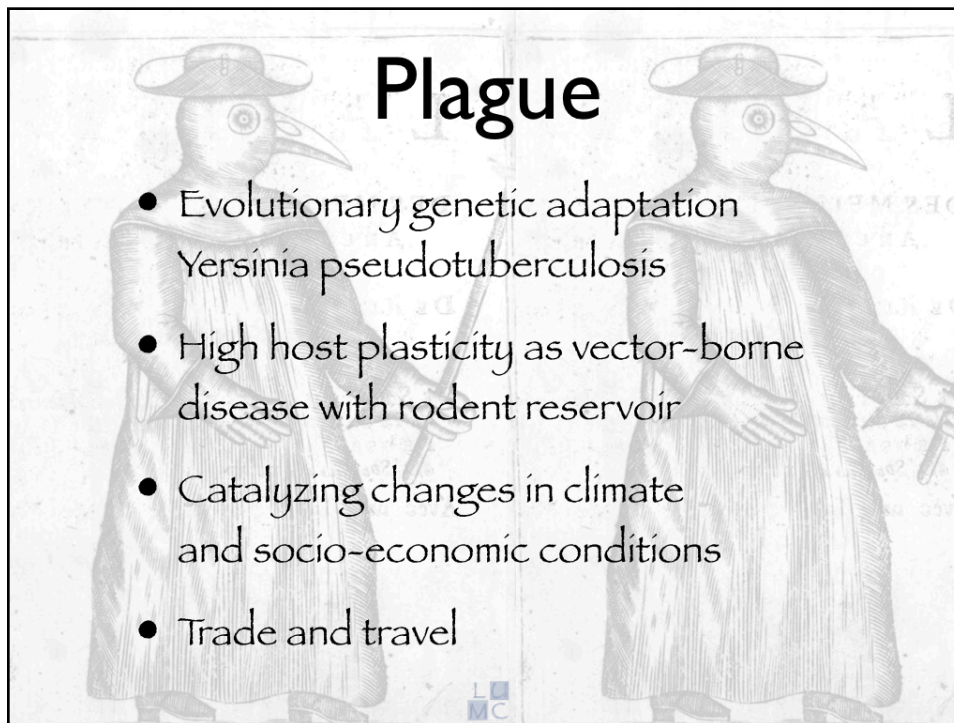
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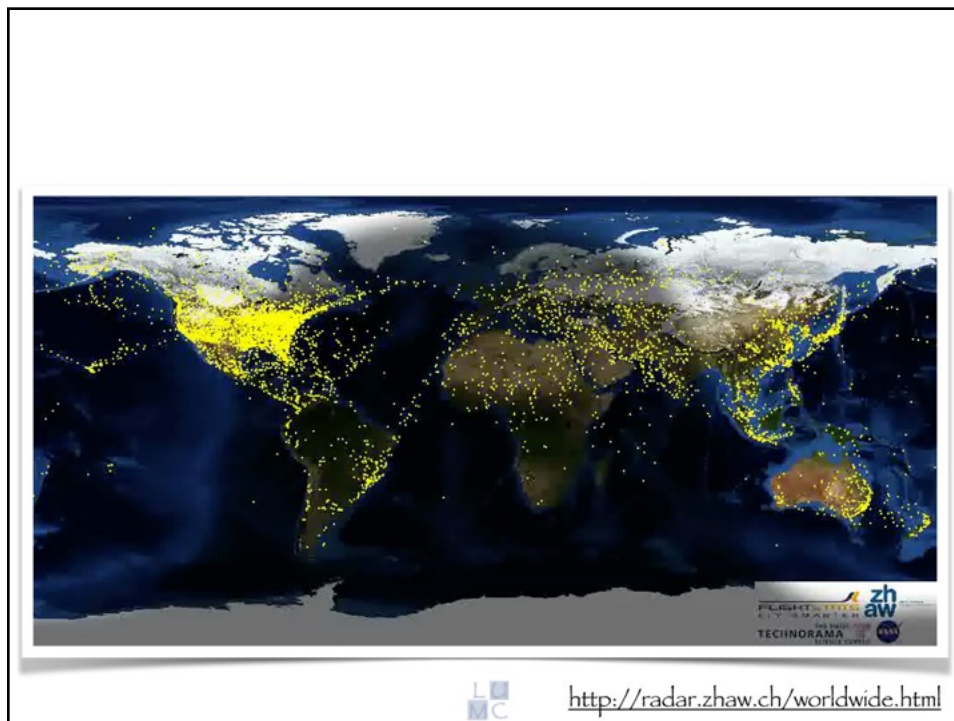
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Plague

- Evolutionary genetic adaptation
Yersinia pseudotuberculosis
- High host plasticity as vector-borne disease with rodent reservoir
- Catalyzing changes in climate and socio-economic conditions
- Trade and travel

LMC



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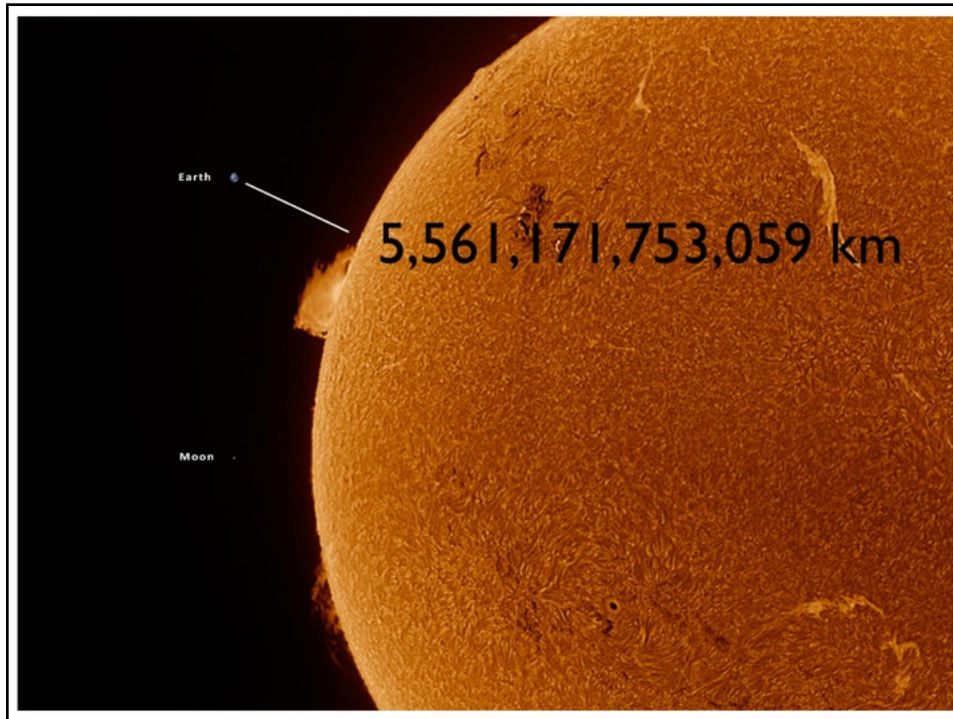


TABLE 1. POPULATION OF THE WORLD AND MAJOR AREAS, 2015, 2030, 2050 AND 2100, ACCORDING TO THE MEDIUM-VARIANT PROJECTION

Major area	Population (millions)			
	2015	2030	2050	2100
World	7 349	8 501	9 725	11 213
Africa	1 186	1 679	2 478	4 387
Asia	4 393	4 923	5 267	4 889
Europe	738	734	707	646
Latin America and the Caribbean	634	721	784	721
Northern America	358	396	433	500
Oceania	39	47	57	71

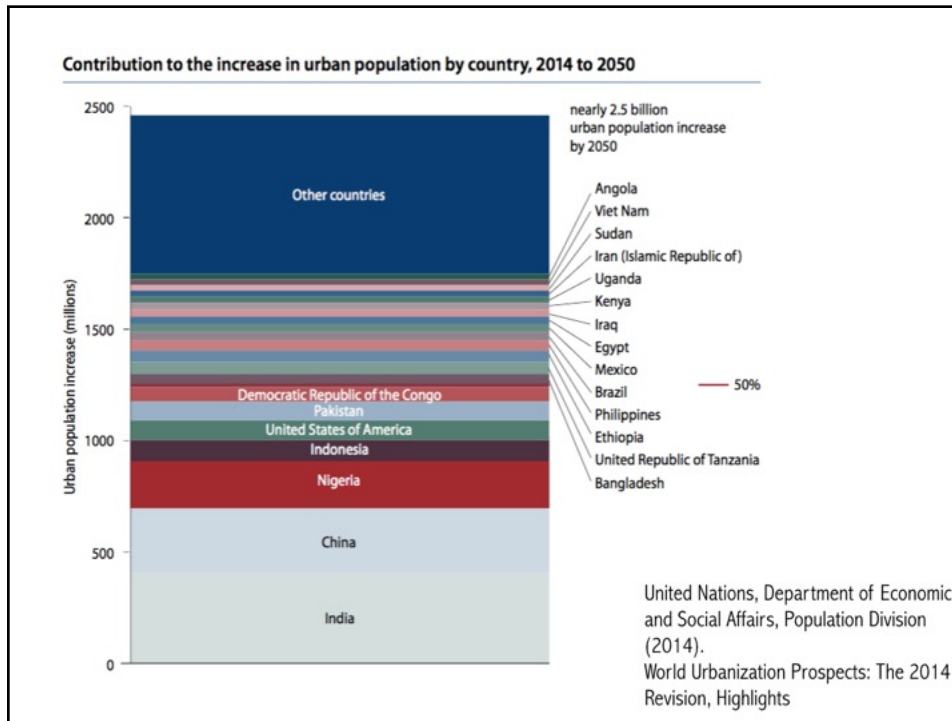
Source: United Nations, Department of Economic and Social Affairs, Population Division (2015). *World Population Prospects: The 2015 Revision*. New York: United Nations.

United Nations World Population Prospects:
 The 2015 Revision, Key Findings and Advance Tables

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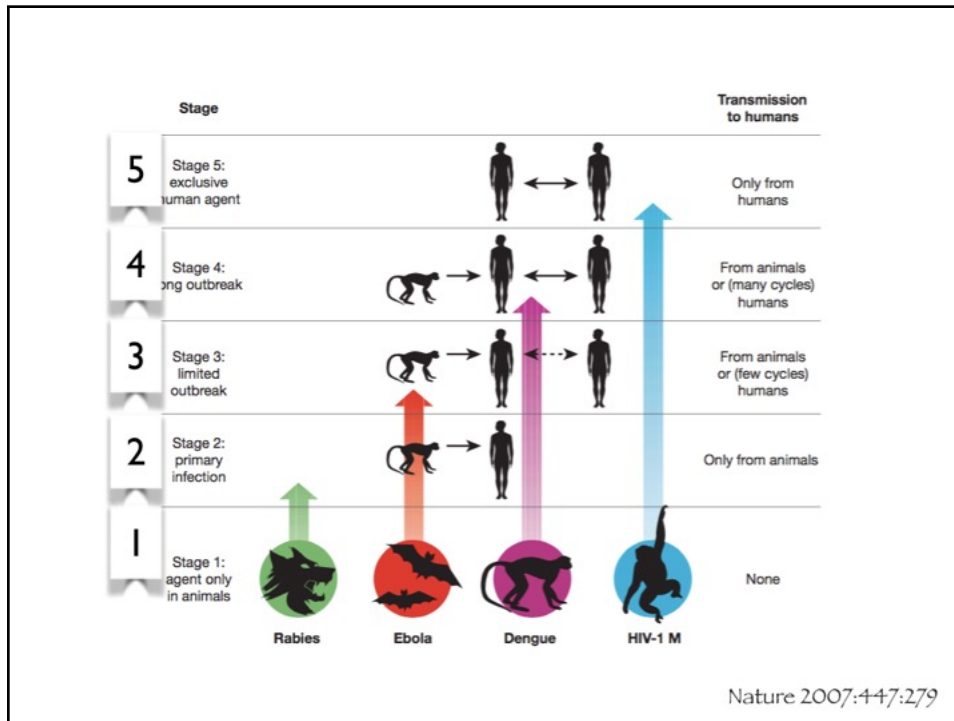
- How do new infections emerge?
- What have we learned from epidemics of 21st century?
- What will the future bring in this borderless world?



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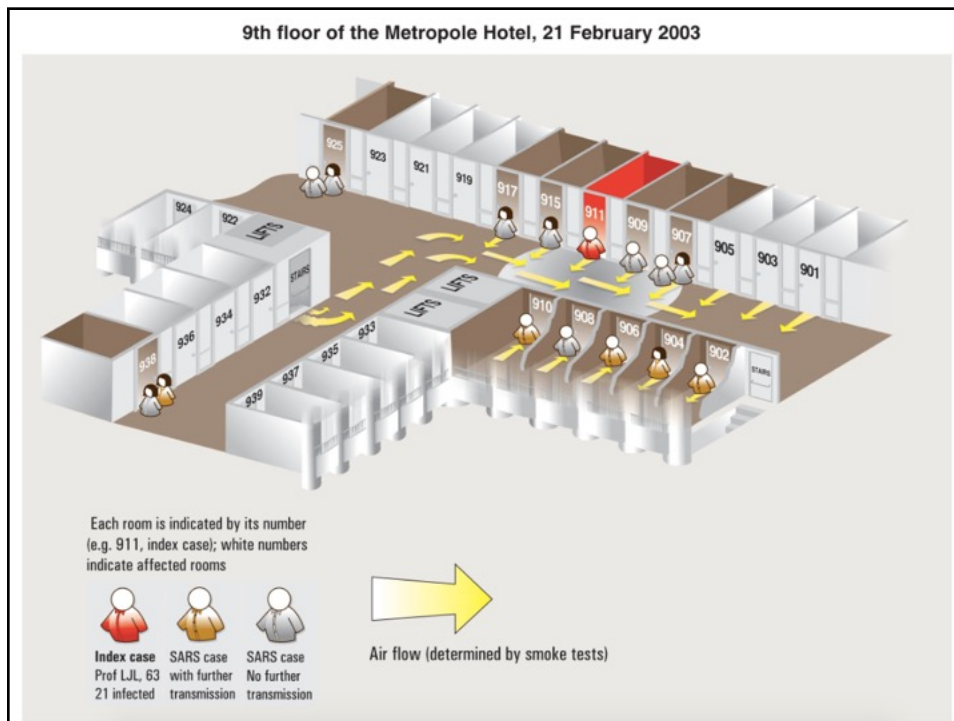
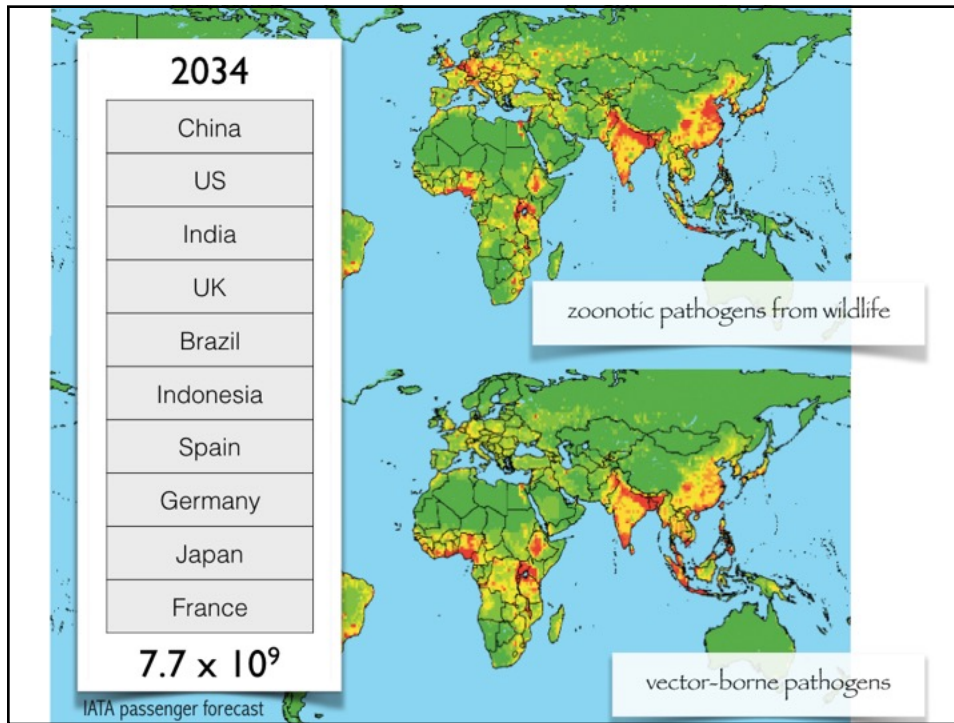


Related non-human primate	smallest species barrier	hunting	HIV (Simian TLV)
Vector-borne	high host plasticity	antropophilic biting behaviour	dengue chikungunya zika
Bird or bat	high geographical dispersal	amplification domestic animal	influenza (MERS-CoV)
Domestic animal	intensity of contact	agricultural activity	Measles (Q-fever)
Wild animal	direct or indirect contact	hiking, hunting, wet markets	Leptospirosis (monkey pox)

Scientific Reports 2015;5:14830

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SARS (2003)

Cross-species transmission CoV	One Health movement
Initial delay reporting	International Health Regulations 2005
Superspreading events (health care facilities)	Rigorous infection control practices
WHO global network virology	National capacity building

Emerg Infect Dis 2013;19:864

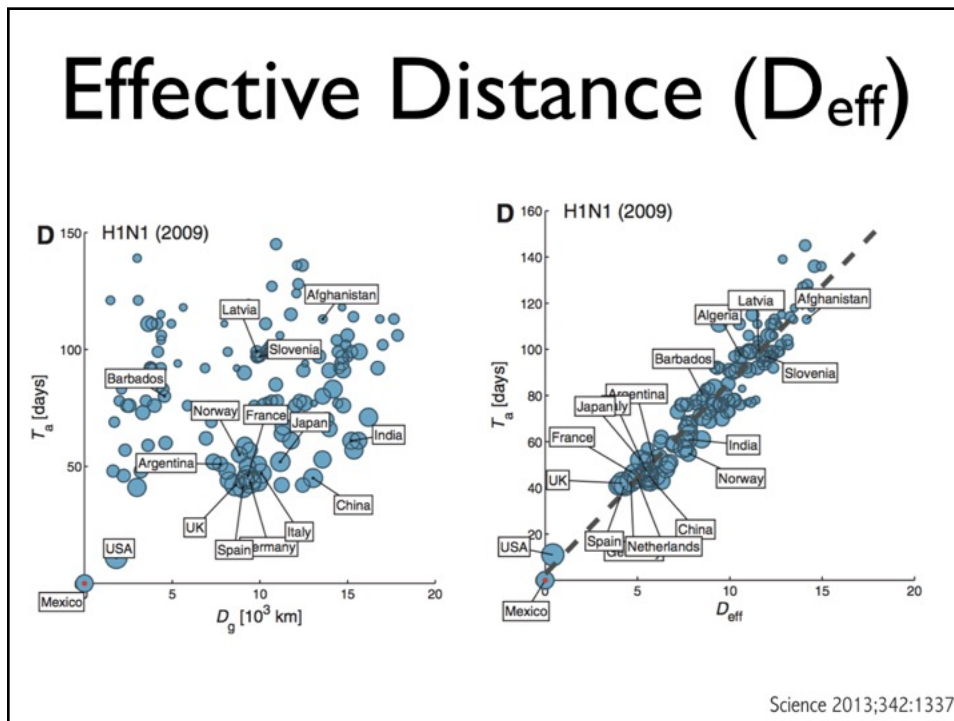
H5NI (1997)

Science 2014;345:1295

Nature 2010;464:1112

H1N1 (2009)

Reassortment virus in swine	Surveillance in pigs (and man)
Unexpected time and geographic region	Early warning systems <10% IHR countries
Vaccine production too late, too little	New cell-culture based influenza vaccine
Unequal access to vaccines and drugs	Revision vaccine distribution



MERS-CoV (2012)

Global legal controversy over ownership
and sharing of dangerous viruses

Revision of 2011 Pandemic Influenza
Preparedness Framework

- to include non-influenza viruses with
pandemic potential
- to include genome sequence data

Science 2014;345:1295

<https://www.foreignaffairs.com/print/1071234>

MERS-CoV (2015)

Medical shopping

Late diagnosis

Crowding ER and culture
of family care-giving

Quarantine failure of
superspreaders

Poor communication and
failure to build trust

Restrict hospital
visitors

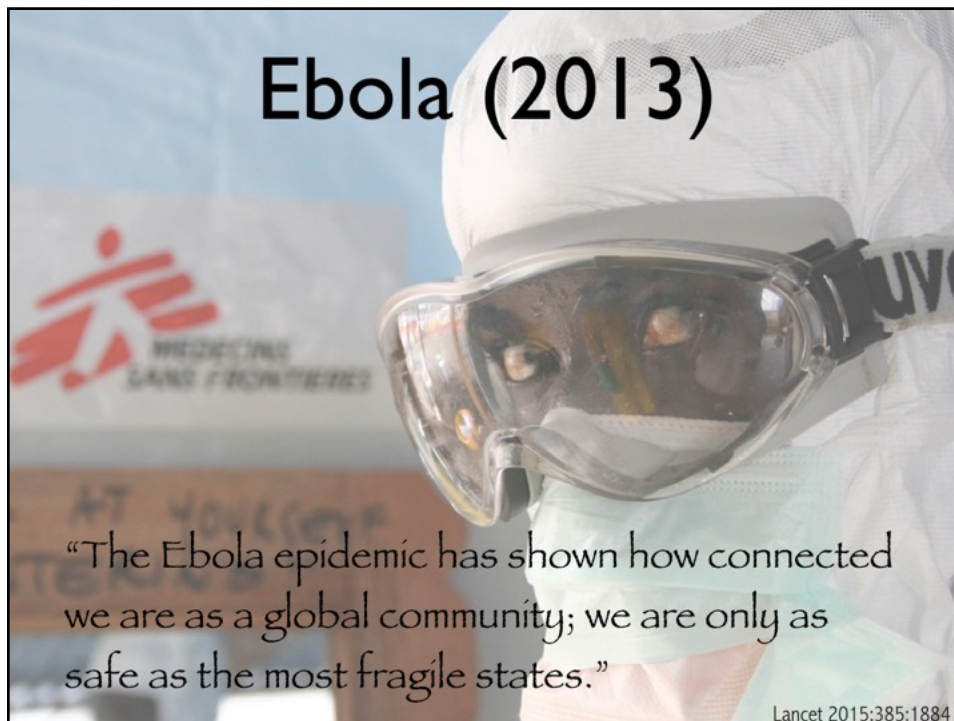
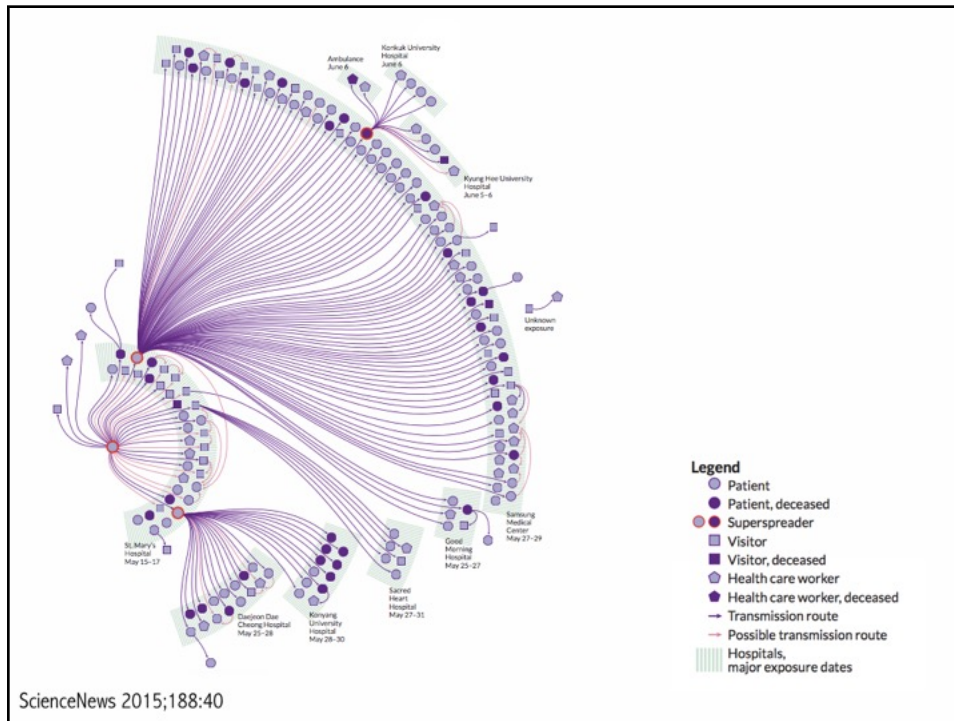
Hospital hygiene and
infection control

Risk communication

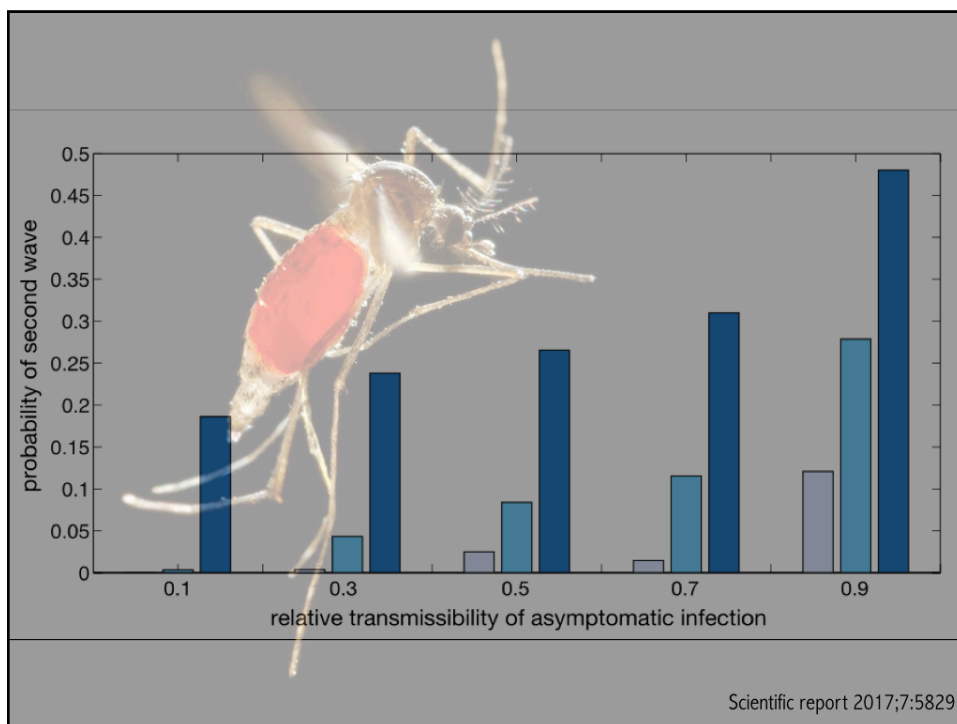
J Hosp Infection 2017;95:207

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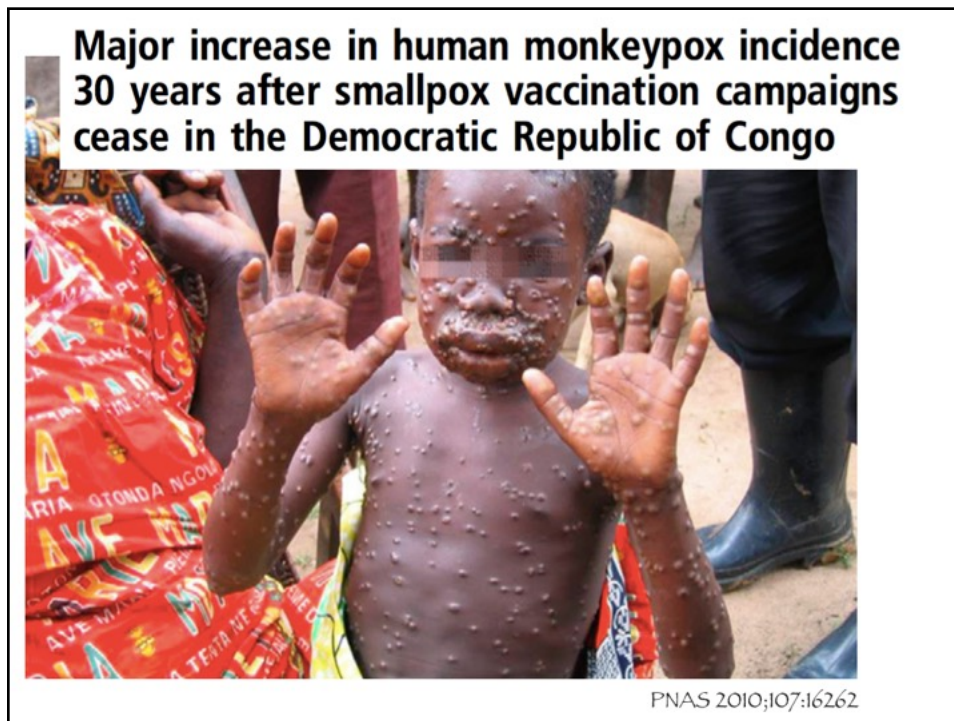
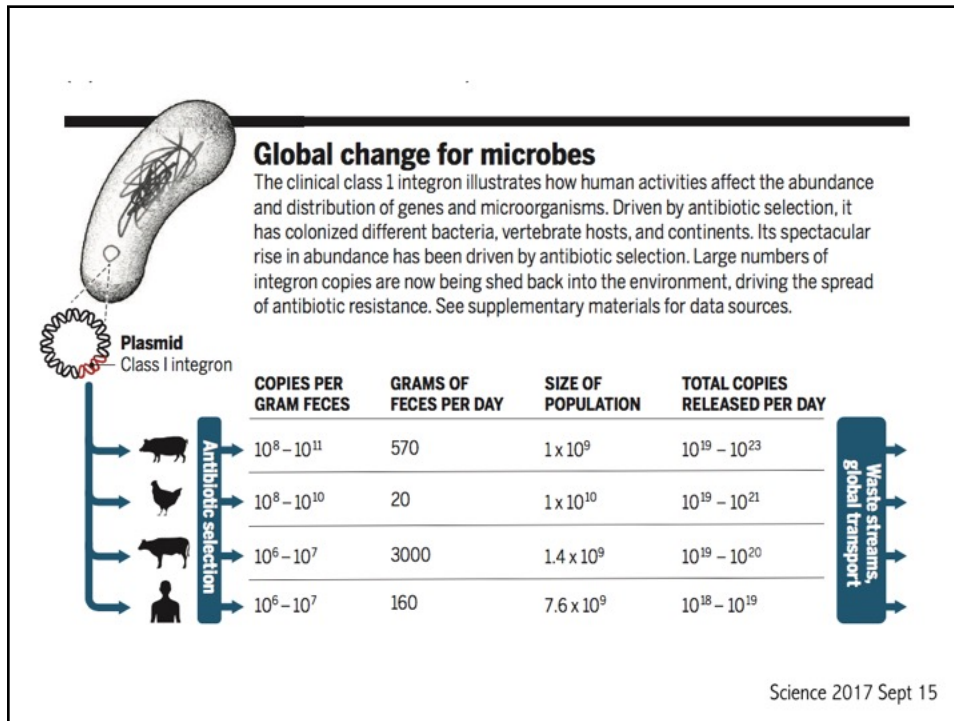
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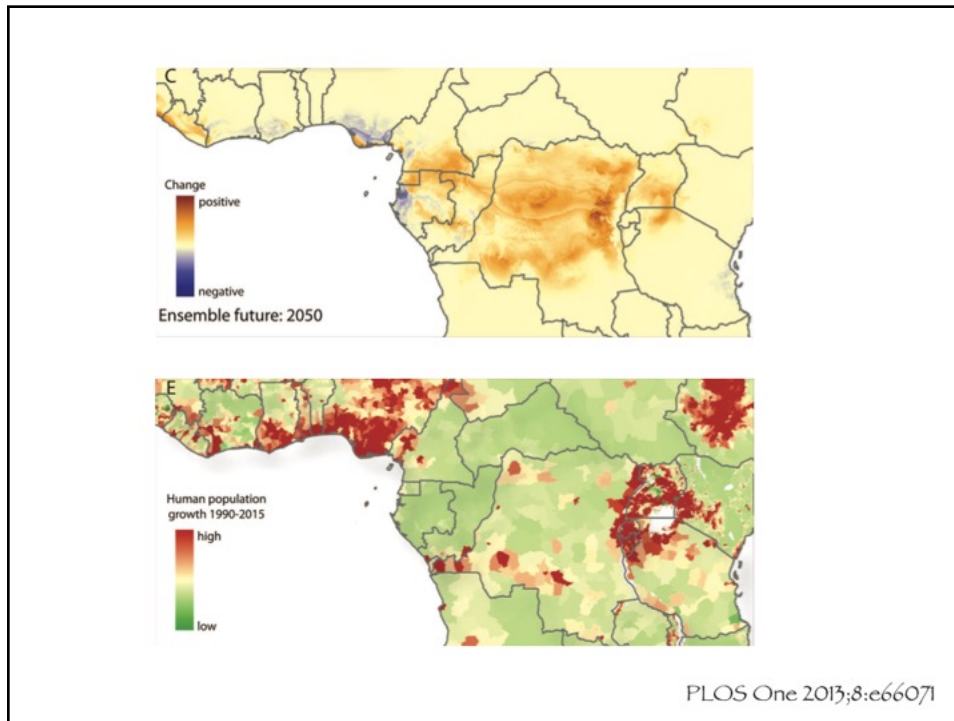


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- Recent epidemics showed how densely connected we are as a global community; we are only as safe as the most fragile states
- Air travel, population growth, encroachment on previously sparsely populated areas in Africa and Asia, climate change, civil unrest and conflict amplify the risk of outbreaks and epidemics



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- Be prepared for the unexpected
Make infectious control practices work
- Strengthen existent public health surveillance systems and infrastructure
- Support low-income countries to implement 2005 International Health regulations
- Adapt the Pandemic Influenza Preparedness Framework to other pathogens



The screenshot shows the IPS website homepage. At the top, there is a navigation bar with links for Home, Education & Events, Professional Practice, News & Media, Membership, About IPS, and Public / Patients. A search bar is located on the right. The main banner features the text "Infection Prevention 2017 Manchester Central 18th - 20th September" along with a stylized cityscape of Manchester and a "10th Anniversary" logo. Below the banner, a section titled "Join IPS and Enjoy Access To ..." lists six benefits with corresponding icons: 1. Influencing: IPS has responded to the EPIC3 consultation. 2. Conference and Seminar Programmes: Information on the IPS Annual Conference. 3. Networking for Infection Prevention Professionals: Local IPS branches. 4. FREE Access to the Journal of Infection Prevention: Free online access for members. 5. IPS Twitter and Infection News Updates: Keeping up with over 1,000 followers. 6. Infection Prevention Best Practice Updates: Latest quality improvement tools available for free download.

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www.webbertraining.com/schedulept.php	
HOW TO PUBLISH IN THE JOURNALS AND WHY IT MATTERS	
September 28, 2017	Speaker: Prof. Elaine Larson , Columbia University, Mailman School of Public Health
<i>(FREE Teleclass)</i>	
INFECTION CONTROL GUIDELINES THAT DID NOT WORK AGAINST EBOLA	
October 5, 2017	Speaker: Prof. Bjørg Marit Andersen , Oslo University Hospital
<i>(FREE Teleclass)</i>	
STRENGTHENING IPAC STRUCTURES THROUGH EDUCATION IN LOW-INCOME OR MIDDLE-INCOME COUNTRIES	
October 12, 2017	Speaker: Prof. Shaheen Mehtar , Infection Control Africa Network, and Stellenbosch University, Cape Town
INFECTION CONTROL IN PARAMEDIC SERVICES	
October 26, 2017	Speaker: Jennifer Amyotte , City of Greater Sudbury Paramedic Services, Canada
<i>(FREE European Teleclass)</i>	
INFECTION PREVENTION CHALLENGES AMONG HOSPITALIZED CHILDREN AND NEONATES IN AFRICA	
October 31, 2017	Speaker: Prof. Dr Angela Dramowski , Stellenbosch University, Cape Town
CLEANING THE GREY ZONES OF HOSPITALS: LESSONS FROM A COMMUNITY-BASED TEACHING HOSPITAL	
November 9, 2017	Speaker: Prof. Makeda Semret , McGill University, Montreal

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