

The first wave of 2009 H1N1 Influenza virus in Ho Chi Minh City

H Rogier van Doorn
Clinical Microbiologist

wellcome trust



Hospital for Tropical Diseases

Wellcome Trust Major Overseas Program
Oxford University Clinical Research Unit VN



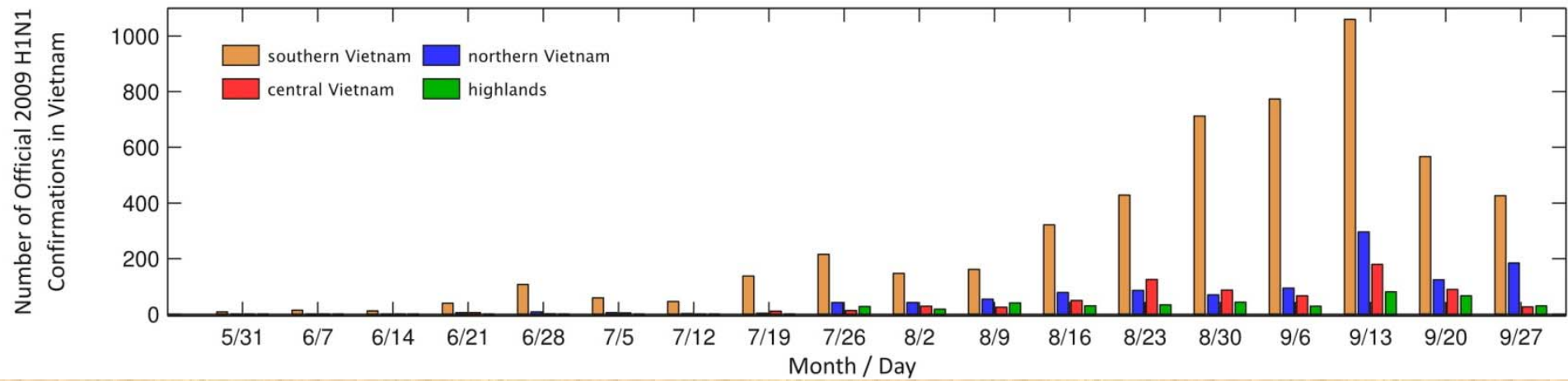
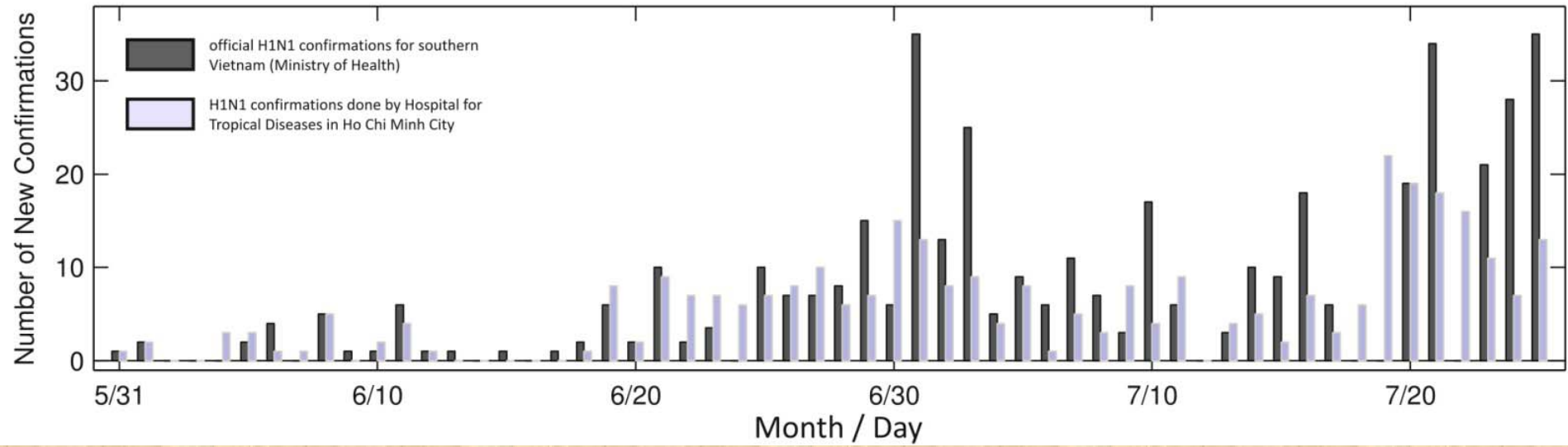
- 24 february first case in a 6 month old girl in San Luis Potosi, Mexico
- 30 March 10-year old boy in San Diego (CA) is sampled
- 16 April CDC confirms swine origin H1N1
- 24 april WHO declares a public health emergency of international concern
- 27 april WHO raises pandemic alert from 3 to 4
- 28 april Vietnam starts airport screenings
- 29 april WHO raises pandemic alert from 4 to 5
- 31 may Vietnam has first case in HCM
- 11 june WHO raises pandemic alert from 5 to 6
- 18 july Large school outbreaks in Ho Chi Minh City
- 3 August Vietnam has first fatality in Nha Trang
- 11 December 47 fatalities, 11040 diagnosed cases in Vietnam

Materials & Methods

- HCM Health Services Reports 10 May – 9 July
- Vietnam Ministry of Health Reports

- 292 patients admitted to HTD 30 May – 20 July
- Symptoms – Routine lab – CXR
- USCDC / OUCRU RT-PCR
 - pt 0–50: sampled daily
 - pt 51–200: sampled day 1 – day 5
 - pt 200–292: sampled day 1 – day 3 – day 5

- Viral culture
- NA Sequencing / NA Inhibitor assay



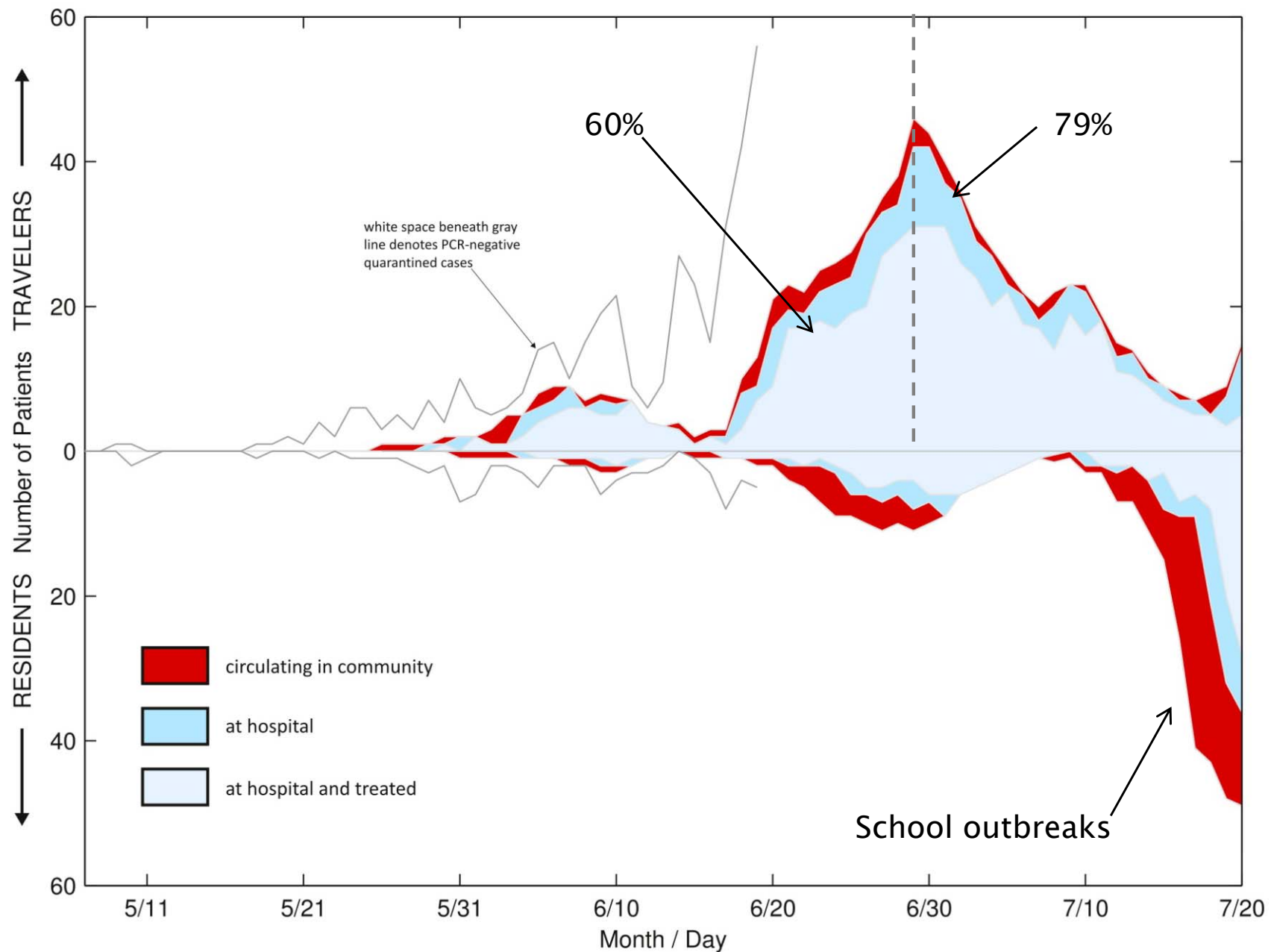
Epidemiology 27 April – 24 July

27 April–8 July

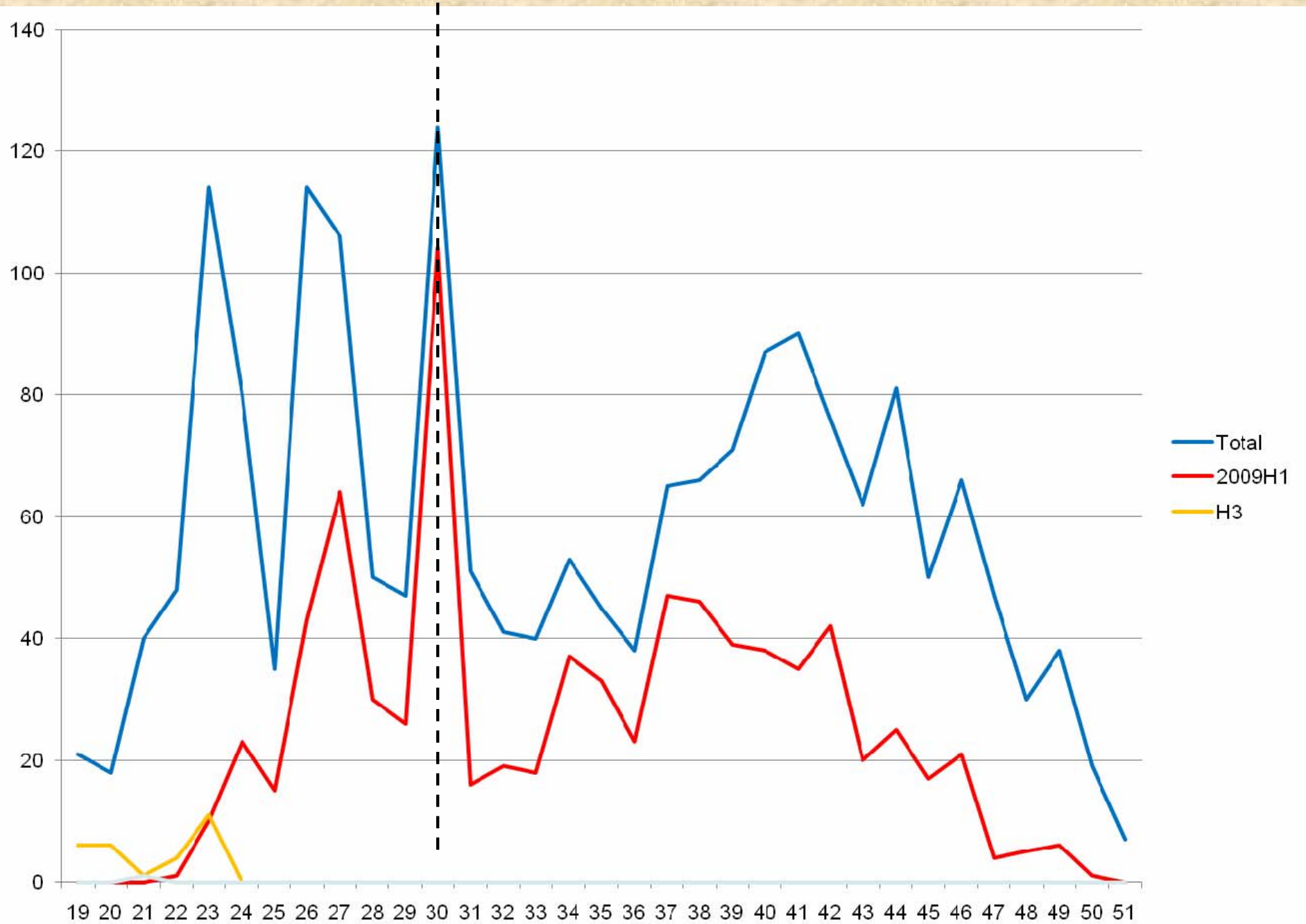
- 630.778 passengers at Tan Son Nhat
- 361.143 from endemic countries
- 967 intercepted and quarantined
- 200 PCR positive

31 May–24 July

- 121 / 169 HTD patients PCR positive



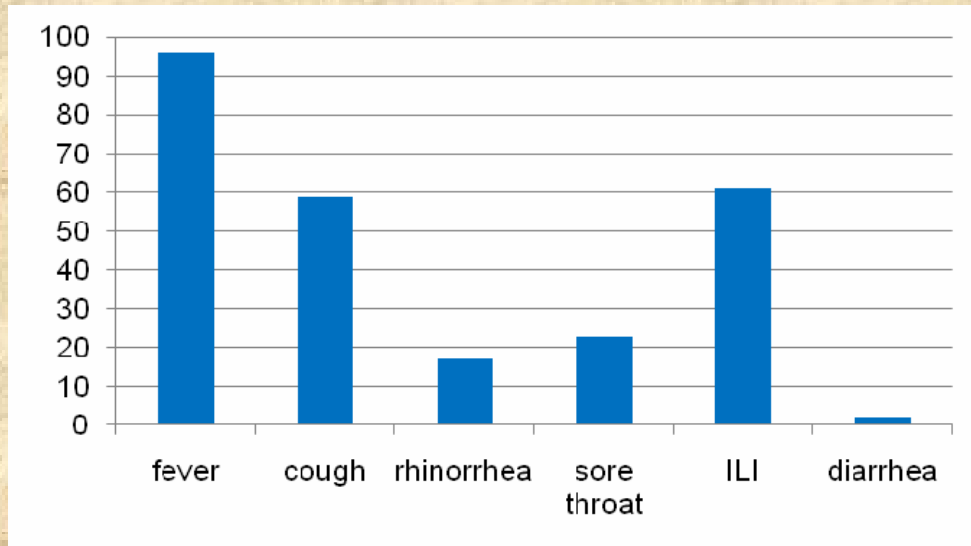
New patients tested and diagnosed at HTD



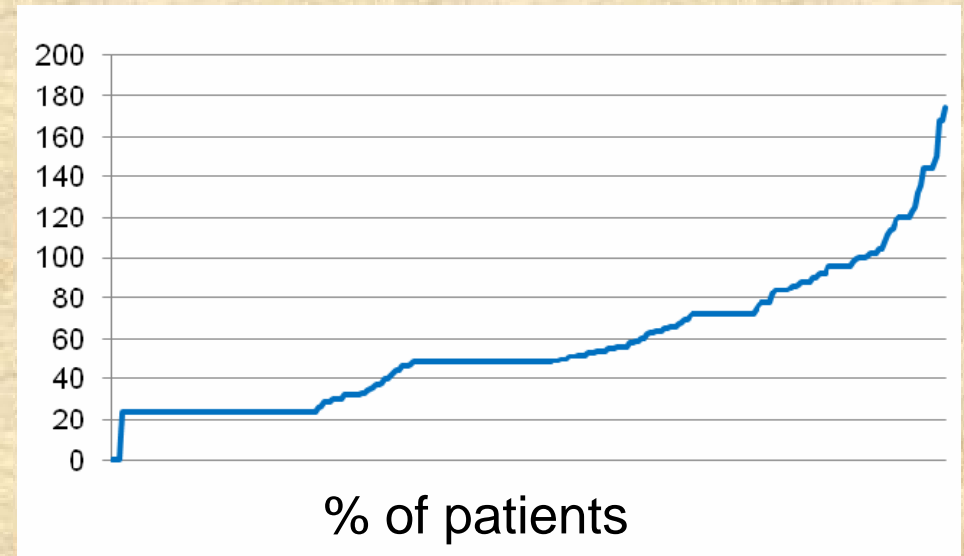
292 HTD Patients

- Median age 26 (1–72)
- 193 (66%) male

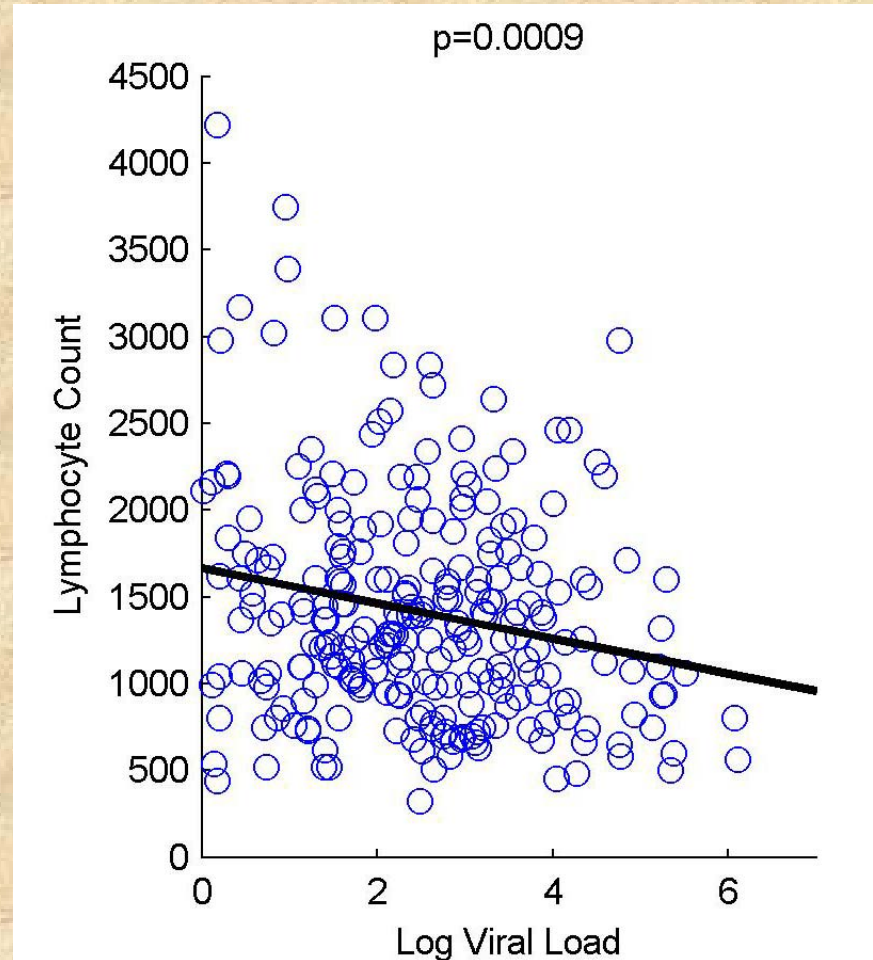
Symptoms



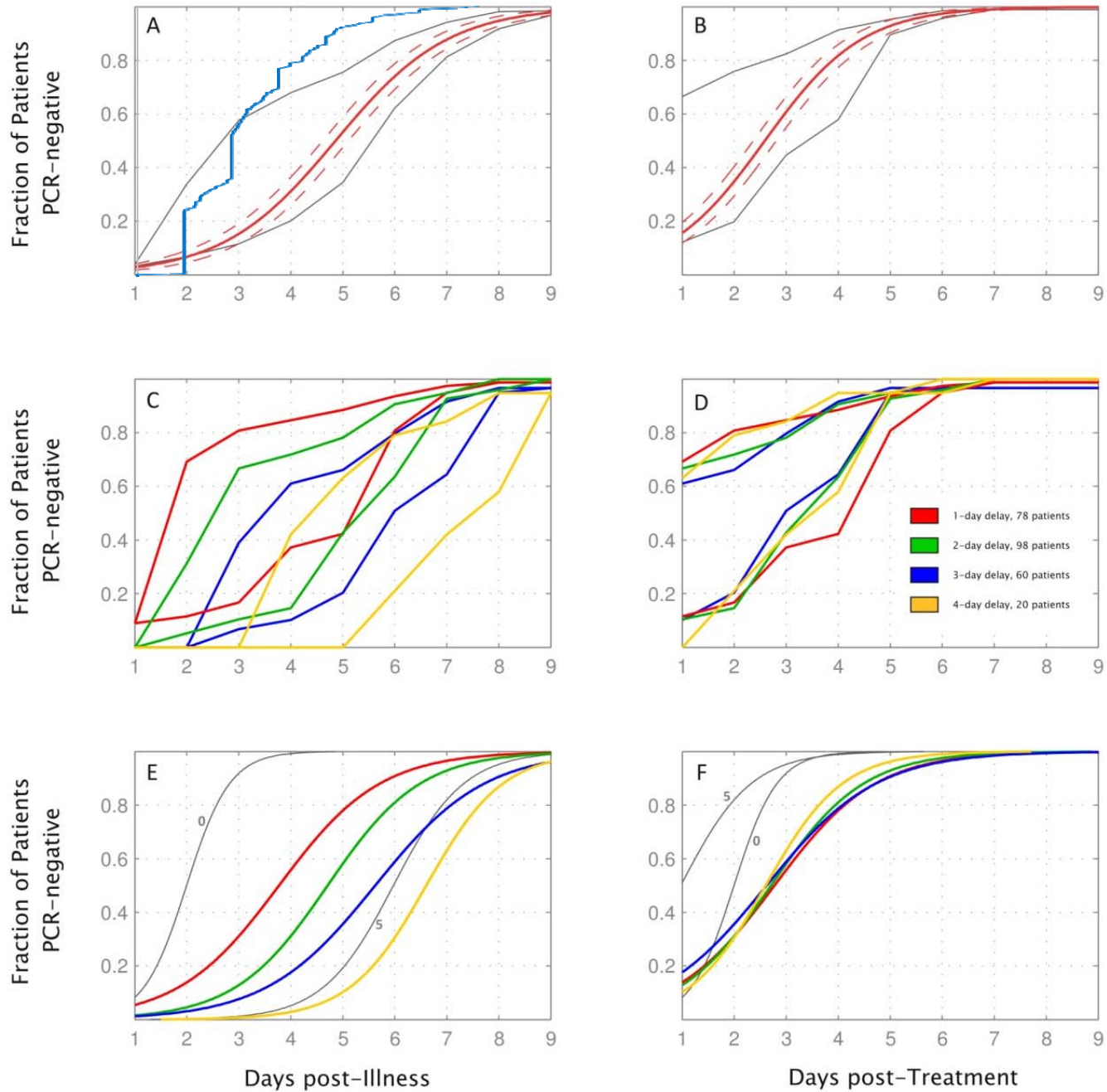
Fever clearance



Lymphopenia vs viral load



Per patient PCR results



Effectiveness of Oseltamivir on Disease Progression and Viral RNA Shedding in Patients with Mild Pandemic 2009 Influenza A(H1N1) Virus Infection

1291 patients with ILI

64% fever, 67% cough, 33% sore throat, 18% rhinorrhea

Median shedding 5 days post illness onset

Oseltamivir initiated <48h associated with shorter duration of fever and viral shedding

110 developed radiographic pneumonia

Oseltamivir use <48h and >48h protective for development of radiographic pneumonia (number needed to treat = 4)

Conclusions

- Containment and treatment policy may have postponed community transmission
- 292 first mild cases of 2009 H1N1
- Most patients present with fever (96%) or ILI (61%)
- Mild clinical course
- Favorable clinical and virological response to early oseltamivir
- No resistance detected in long shedders



wellcome trust



Prof Nguyen Tran Chinh
Prof Tran Tinh Hien

Microbiology

Dr Nguyen van Vinh Chau
Dr Pham thi Nhien
Dr Vo Minh Hien
Le thi Tam Uyen
Tran thi Thanh Tam
Tran Nguyen Phuong Thao

HTD Ward D

Dr Nguyen thi Dung
Dr Pham Phuong Mai
Dr Le thi Thu Thao
Dr Le Thanh Son
Dr Nguyen Thanh Truong
Kim Lan
Tran thi Thuy Trang
Nguyen Ngoc Trinh
Lai thi Hoai Thu

Tran thi Xuan Lan
Bui thi Thanh Bach
Tran Le Quynh Nhu
Nguyen thi Cam Chinh
Le thi Nhien
Pham thi Quoc Anh
Nguyen Xuan Minh
Nguyen thi Thanh Van
Nguyen thi Quang Tuyen

Prof Jeremy Farrar

Virology

Dr Rogler van Doorn
Dr Juliet Bryant

Viral Culture lab

Prof Do Quang Ha
Dr Vo Minh Hien
Lam Anh Nguyet
Le Nguyen Truc Nhu

Molecular Virology Lab

Tran Thuy Ngan
Dr Vu thi Ty Hang
Tran Tan Thanh
Le thi Tam Uyen
Nguyen thi Tham
Duong thi Tam
Nguyen thi Thuy Chinh
Bkrong

Modelling and Statistics

Dr Maciej Boni
Tran Dang Nguyen
Dr Marcel Wolbers