

Science and Art for epidemiologists
to influence policy makers

Experience from Japan: “Fortune has only forelock”

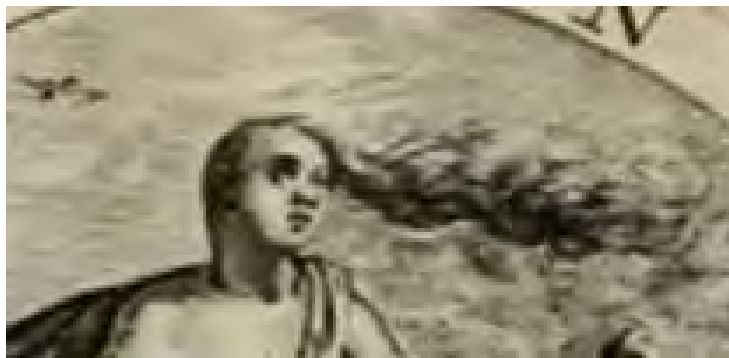
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“Fortune has only forelock”

- Fortune is bald behind.
You can't seize her hair
from backside once she is
passed...



Forelock Books

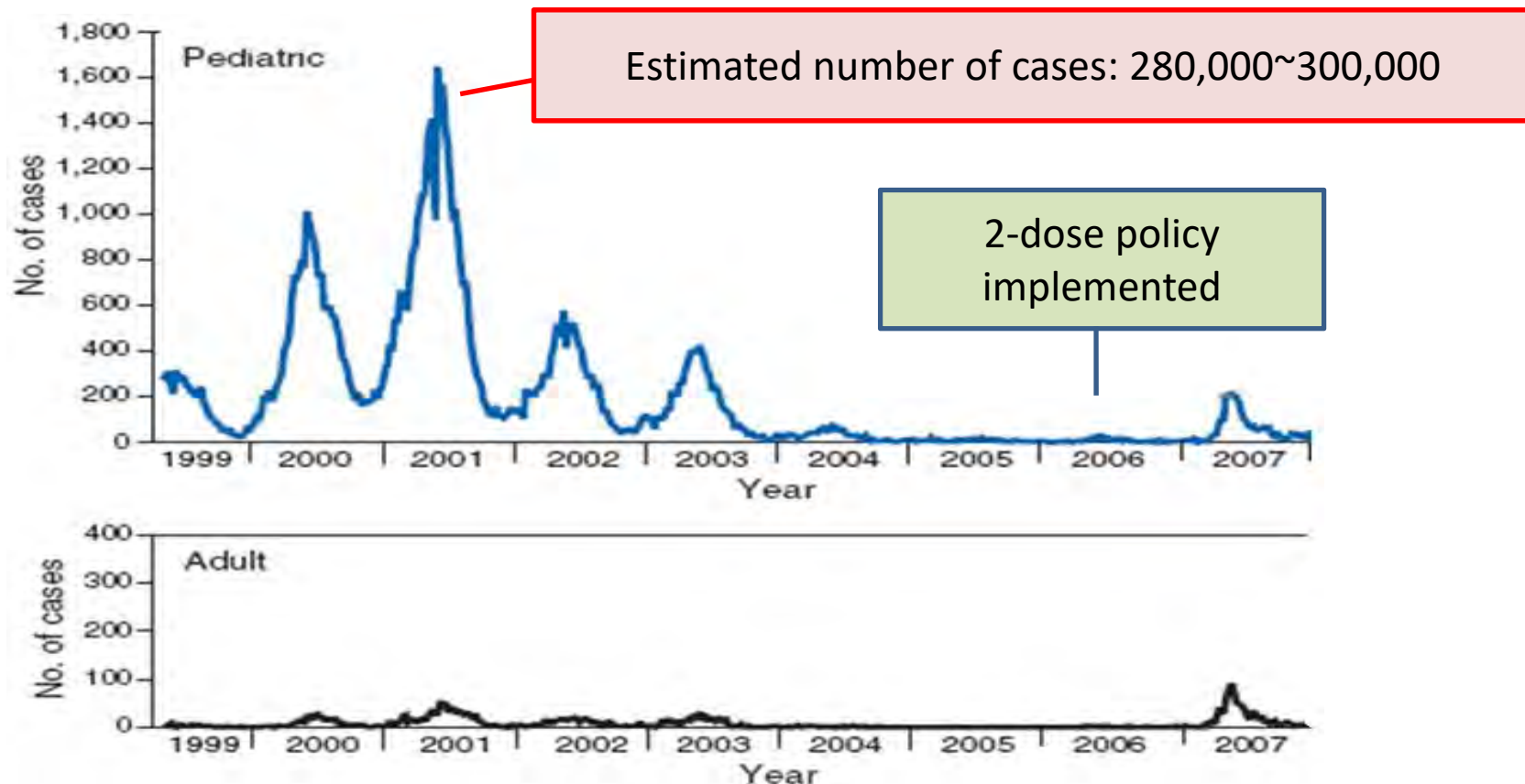


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Measles situation, 1999-2007

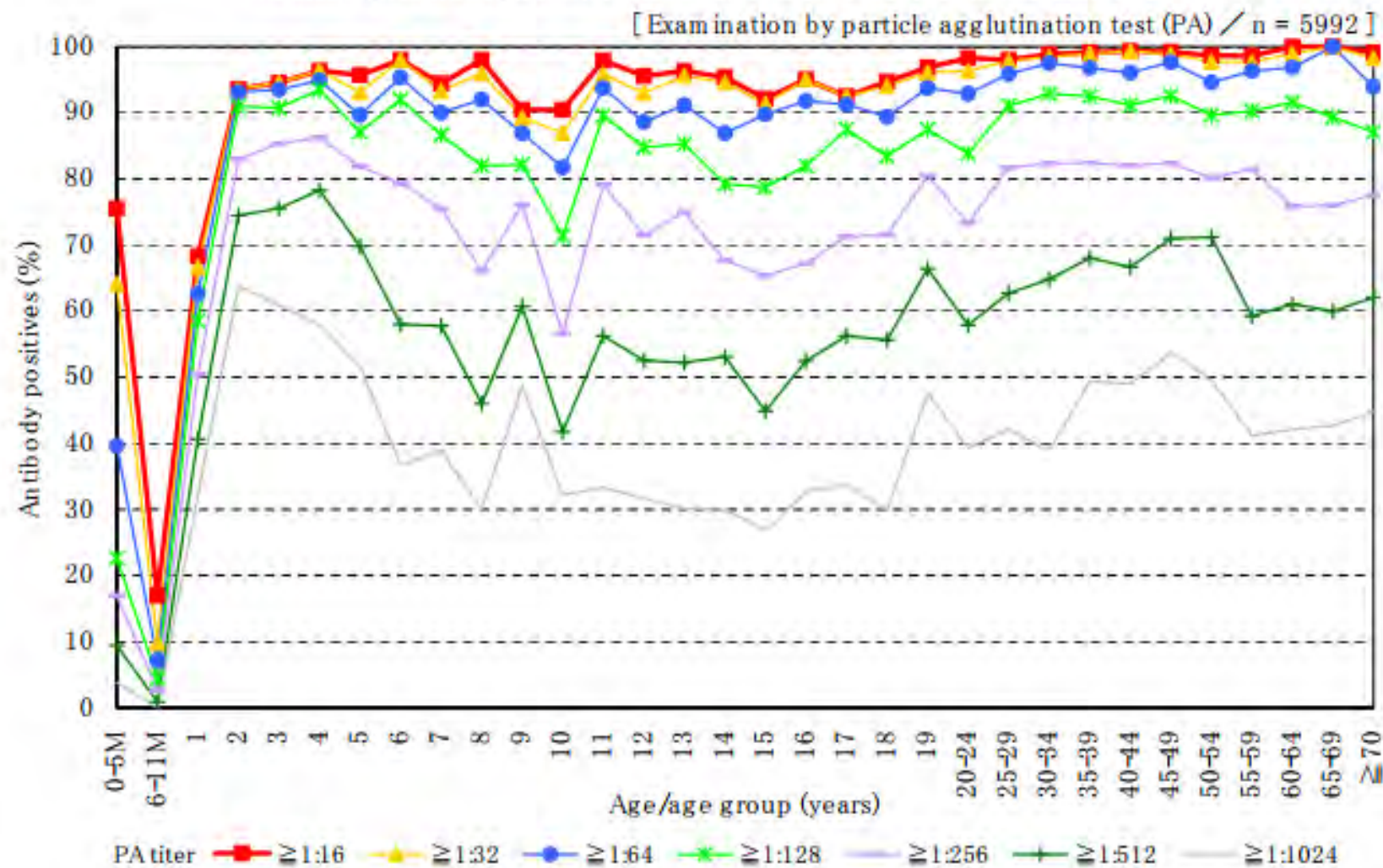
- measles-containing vaccine (MCV) has been a routine vaccine since 1978



* During 1999–2007, measles surveillance in Japan was conducted via aggregate case reporting from two sentinel surveillance systems: pediatric and adult. In the pediatric sentinel system, cases were reported from a representative sample of approximately 3,000 pediatric inpatient and outpatient facilities. In the adult sentinel system, cases were reported from a sample of approximately 450 inpatient hospitals. In April 2006, the adult definition was changed from age ≥ 18 years to age ≥ 15 years. However, some pediatric facilities continued to report persons aged ≥ 15 years.

Age distribution of measles PA antibody positives in Japan, 2006

— National Epidemiological Surveillance of Vaccine-Preventable Diseases, 2006 —



Large outbreak in 2007



International impact

Reuters: 30 May 2007

MAY 30, 2007

Japanese isolated in Canada after measles exposure

CALGARY, Alberta (Reuters) - A group of 130 Japanese tourists, mostly students, was quarantined in a hotel in Western Canada's Rocky Mountains on Tuesday as health officials scrambled to test their exposure to measles, authorities said.

- Canada: A group of 130 Japanese tourist was quarantined.

22 Feb2008

FEBRUARY 22, 2008  REUTERS

Japan boy baseball player caused U.S. measles cases

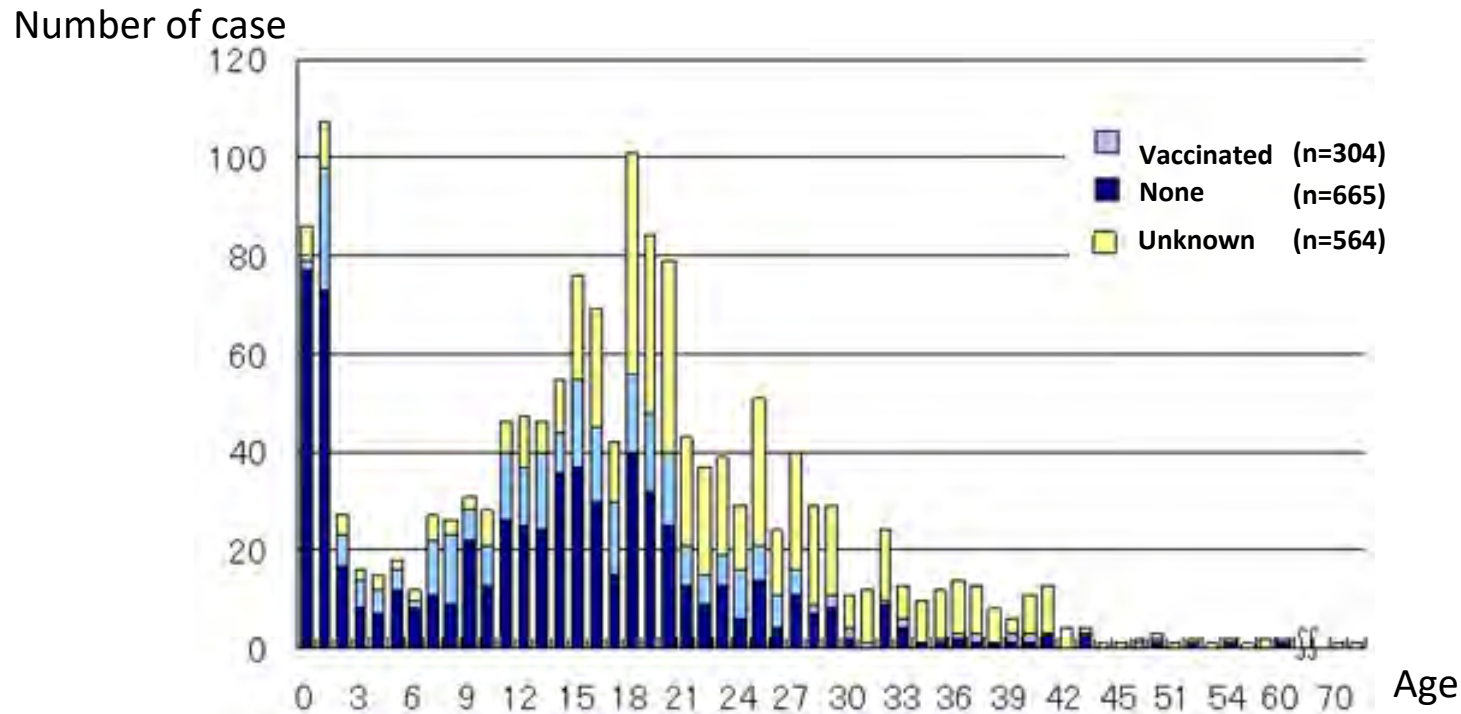
Will Dunham



- US CDC: A boy with measles who was on the Japanese team in Little League World Series triggered a US outbreak in 2007.

Findings

Case-based report of measles, pilot study in 2007



- Main affected age groups: teenagers and early 20s.
- 20% were vaccinated (1 dose), 43% were non-vaccinated
- Several outbreak investigations at high schools indicated the same

National Measles Elimination Plan

- December 2007
- Immunization strategies
 - Existing routine vaccination at the age of one (1st dose) and 5 or 6 (2nd dose)
 - Supplementary immunization at the age of 13 or 18 for 5 years (2008-2012) to cover birth cohort from 1990 to 1999
- Case-based measles surveillance
 - Promote laboratory confirmation with PCR testing
 - Promote immediate case investigation to prevent further transmission

麻疹に関する特定感染症予防指針

平成19年12月28日
(平成28年2月3日一部改正・平成28年4月1日適用)

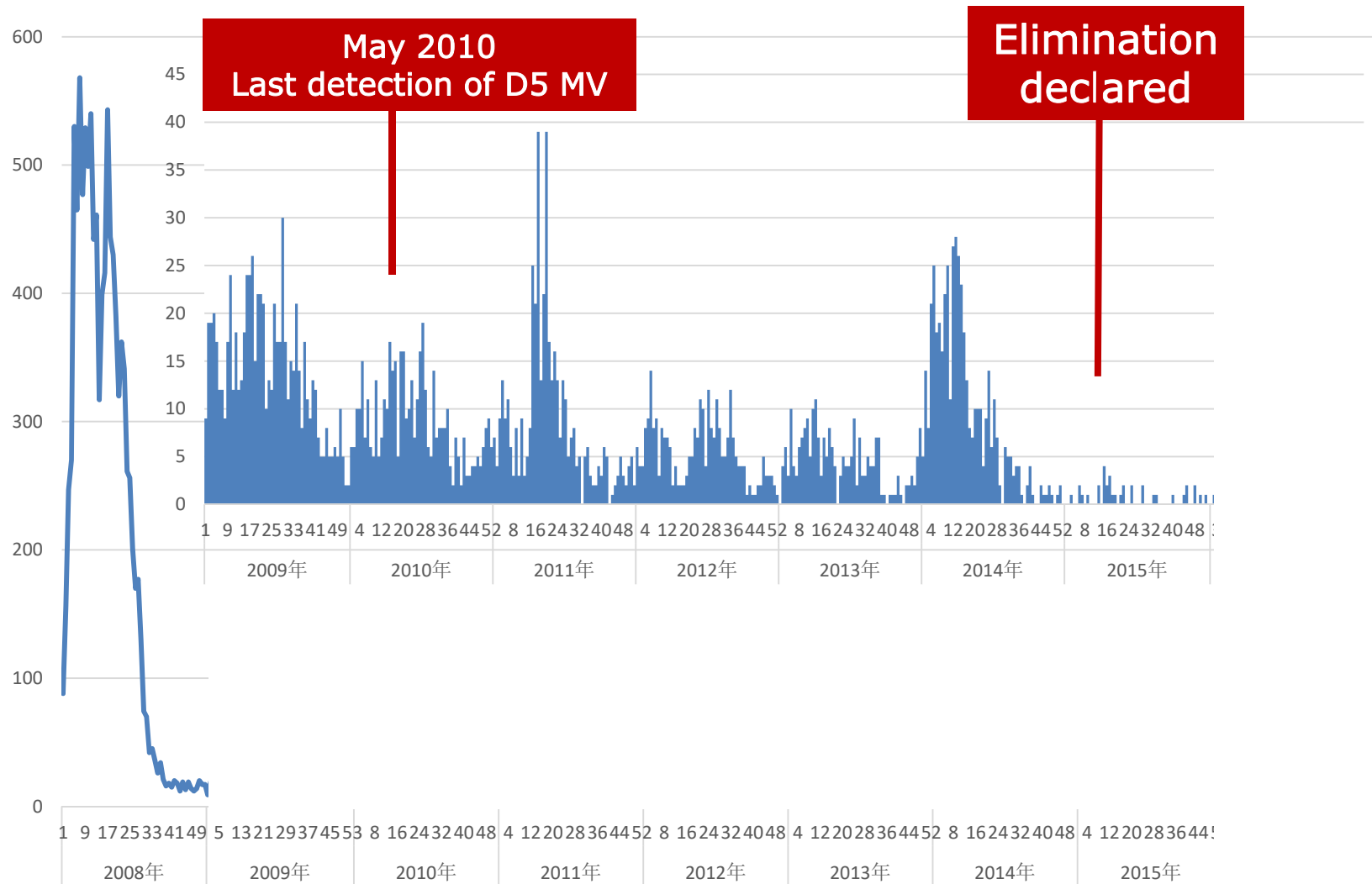
厚生労働省

高熱と耳後部から始まり体の下方へウイルス感染症である。感染力が強い。脳炎を併発し、精神発達遅滞等のことがある。さらに、よりまれではあるが、特異な脳炎を併発することがあり、この併発は運動障害等が進行した後、の感染力及び重篤性並びに流行したと、行政関係者や医療関係者ももちろん積極的に取り組んでいくことが種

から予防接種法（昭和23年法律第21号）に基づき、積極的に接種を勧奨することにより、麻疹の発生を予防及びまん延の防止に努めてきた。また、平成18年4月からは、麻疹の患者数が減少し、自然感染による免疫増強効果が得づらくなってきた状況を踏まえ、それまでの1回の接種から2回の接種へと移行し、より確実な免疫の獲得を図ってきた。しかし、平成19年に10代及び20代を中心とした年齢層で麻疹が大流行し、国は、麻疹対策を更に強化するため、平成20年に麻疹に関する特定感染症予防指針（平成19年厚生労働省令第442号）を策定し、積極的に予防接種法第5条第1項の規定による予防接種（以下「定期の予防接種」という。）の対象者を拡大するなどの取組を進めてきた。こうした取組の結果、平成20年には11,013件あった麻疹の報告数も、平成23年には442件と著実に減少し、高等学校や大学等における大規模な集団発生は見られなくなってきたところである。

一方、麻疹を取り巻く世界の状況に目を向けると、世界保健機関西太平洋地域事務局は、平成24年（2012年）までに麻疹の排除を達成するという目標を掲げ、我が国を含め、世界保健機関西太平洋地域事務局内の各国は、目標の達成に向けた対策が求められてきたところである。麻疹の排除の定義は、平成20年には「国外で感染した者が国内で発症する機会を除き、麻疹の診断例が1年間に人口100万人当たり1例未満であり、かつ、ウイルスの伝播が継続しない状態にあること」とされていたが、遺伝子検査技術の普及により土着株と輸入株との鑑別が可能となったこと等を踏まえ、平成24年に世界保健機関西太平洋地域事務局より新たな定義として「適切なサーベイランス制度の下、土着株による感染が1年以上検出されないこと」が示され、また、麻疹の排除達成の認定基準として「適切なサーベイランス制度の下、土着株による感染が3年間検出され

Measles situation, 2008-2015

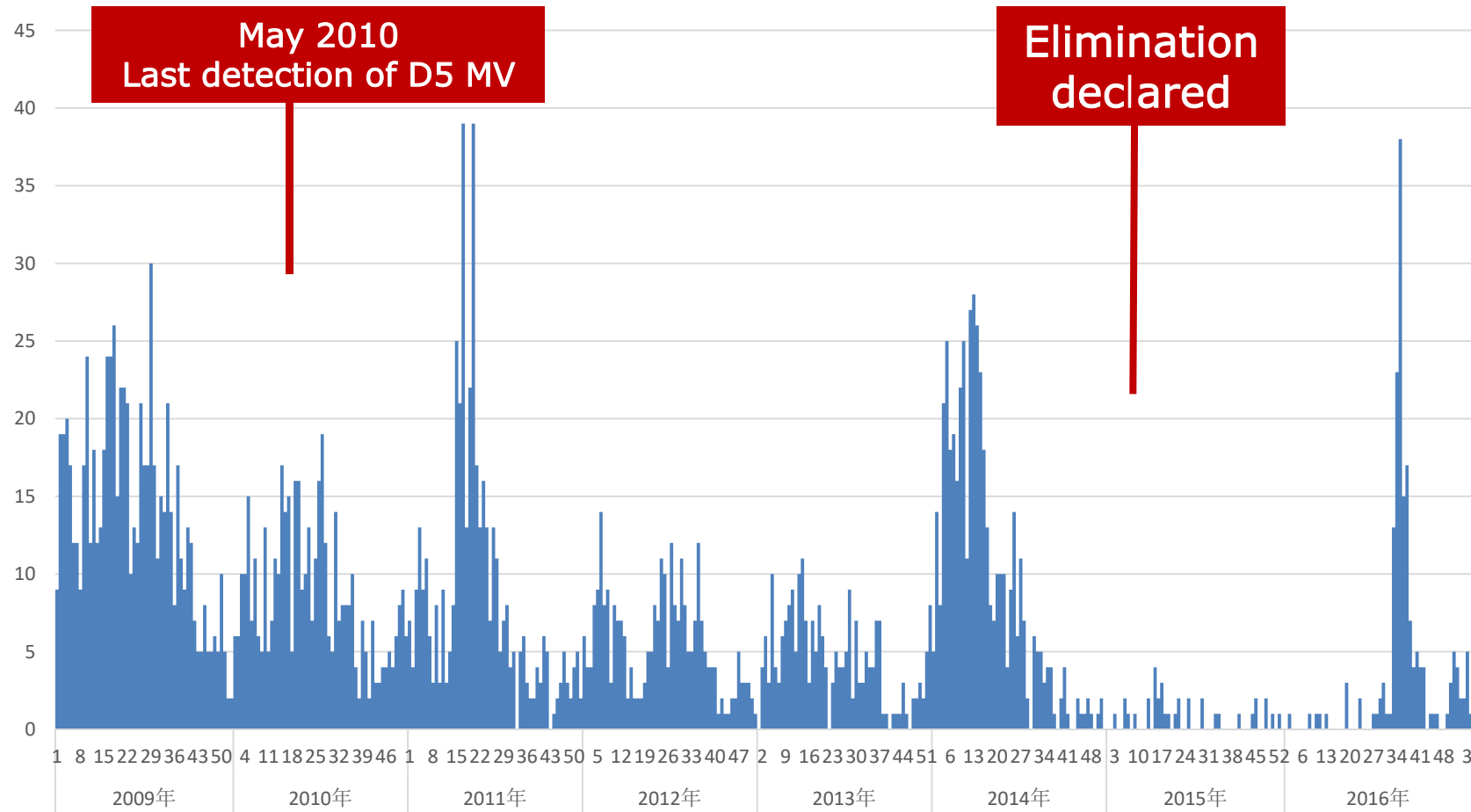


In March 2015...



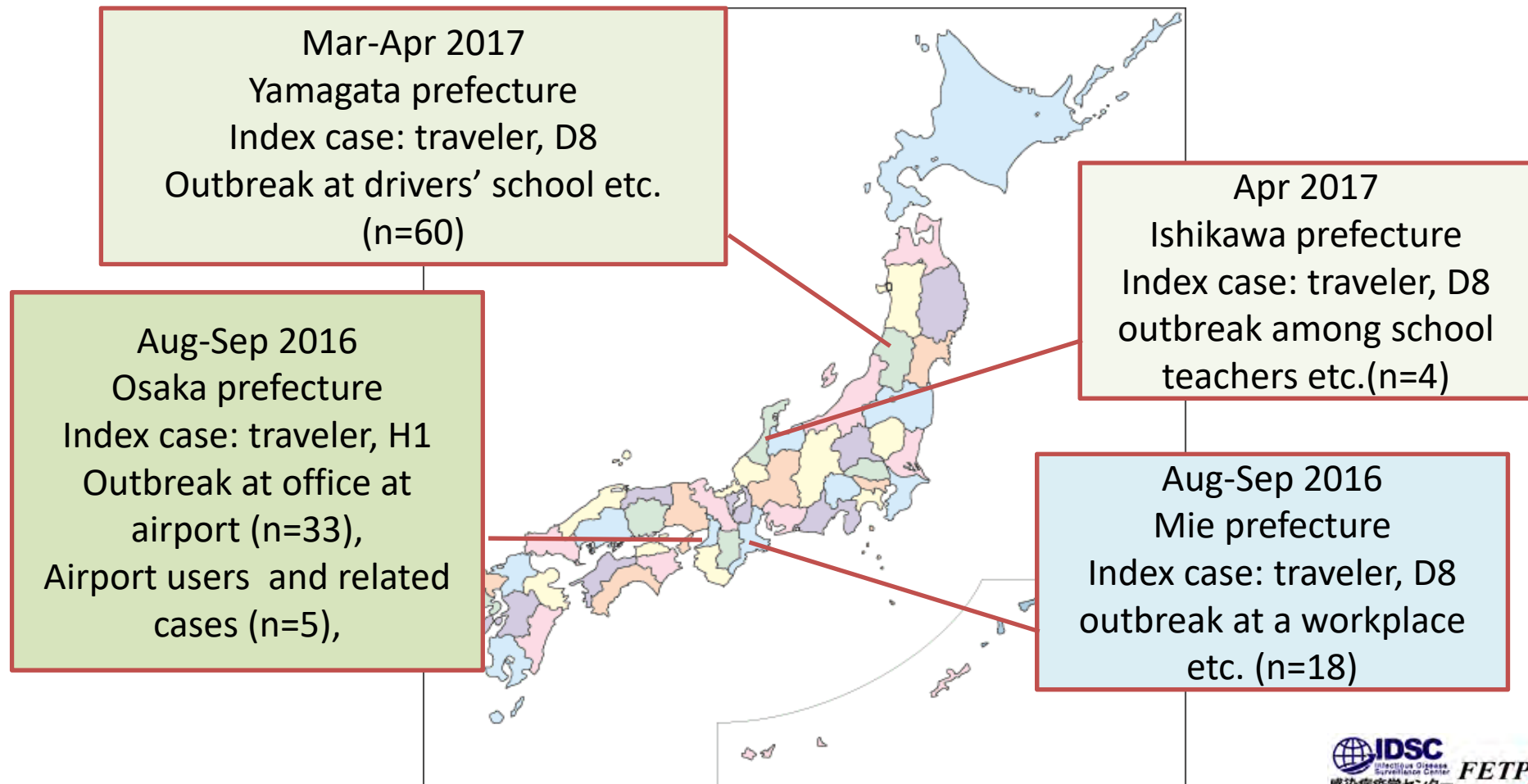
Measles Regional Verification Commission for the WHO
Western Pacific Region verified that Japan had
achieved measles elimination

Measles situation, 2008-2016

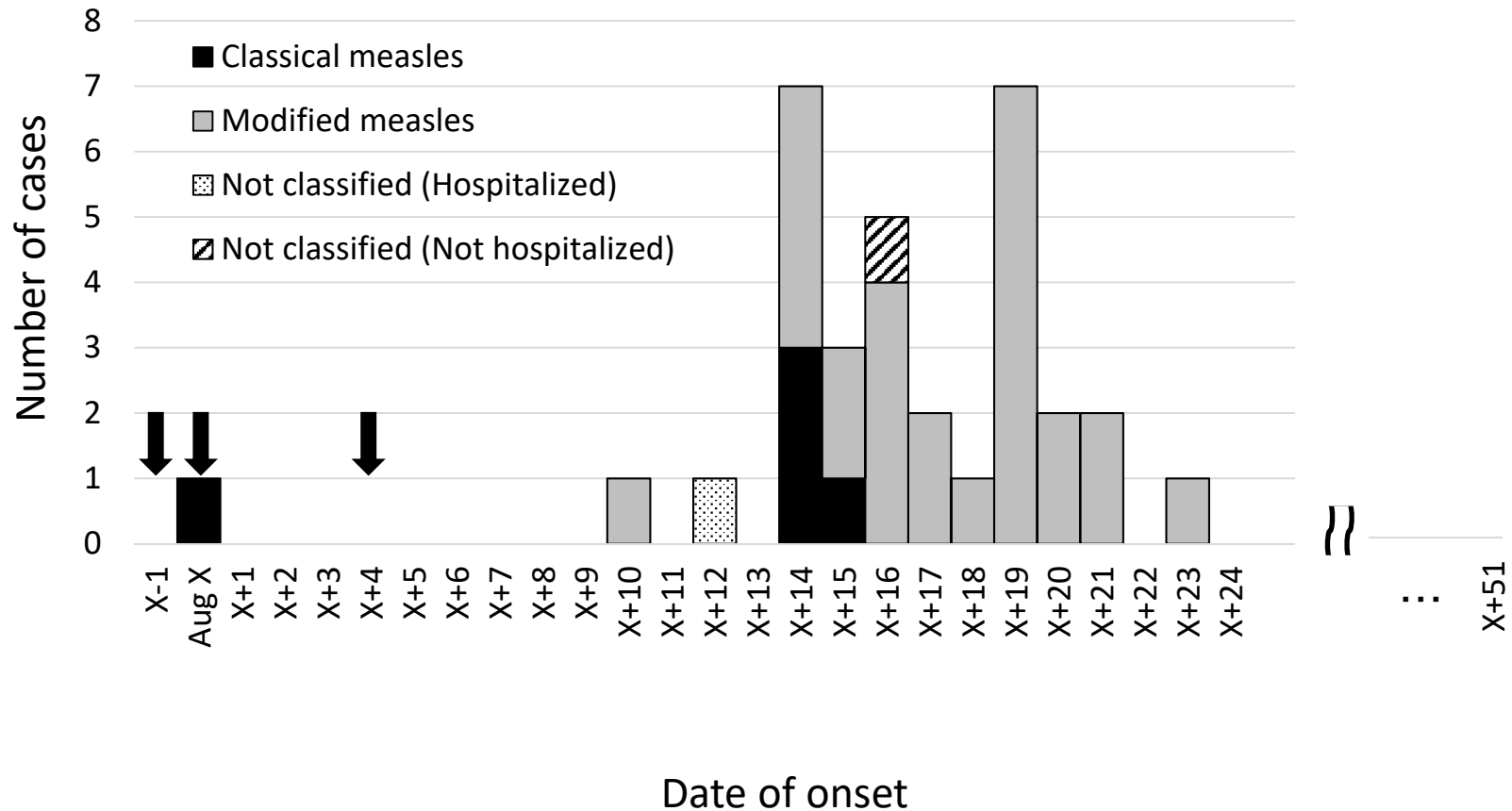


Examples of measles outbreak followed by imported case (2016-Apr 2017)

FETP trainees were involved in the outbreak investigations and technical support for control measures

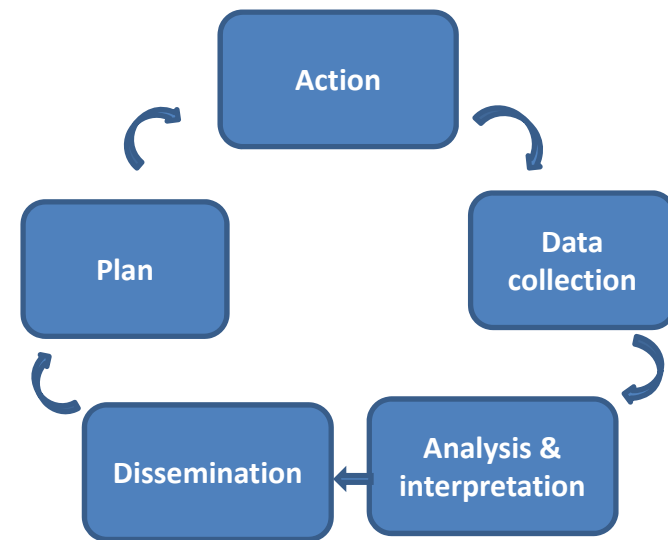


Confirmed measles cases among airport workers, Aug-Sep 2016 (n=33)



Summary

- Field epidemiologists had collected, analyzed on measles situation and kept trying to convince policy makers.
- Social pressure from both outside and inside Japan finally moved policy makers.
- Field epidemiologists need to monitor and evaluate epidemiological situation to improve the policy.
- Japan FETP is continuously engaged in public health response.



Lessons and learned



- Concrete scientific evidence does not always convince policy makers.
- Proper time shall come. Field epidemiologists need to be prepared to “seize the fortune by the forelock.”

Acknowledgement

- Japan FETP fellows and alumni
- IDSC/NIID
- Clinicians, local public health officers, local public health laboratories, local/national government who engage in national surveillance and measles elimination