

Measles

A race to eradication

The US media is abuzz after an outbreak of measles in Disneyland, but the disease will keep popping up until it is wiped out worldwide.

BY DECLAN BUTLER

Measles debate has reached fever pitch in the United States after an outbreak that began in December at Disneyland in southern California. Many media outlets and politicians have focused on the country's growing anti-vaccination movement. However, the bigger problem lies elsewhere. The United States was declared free of measles in 2000, and all outbreaks since then have been sparked by imported cases, which will continue to occur until measles is eradicated worldwide.

The World Health Organization (WHO) has set targets for 2015, but progress towards them has been slow (see 'Targets in trouble'). After the Measles & Rubella Initiative was founded in 2001, the number of cases and deaths fell. But progress against the disease started to stall in 2007 (see 'A fall ... then a stall') and vaccination coverage plateaued in 2010, when funding plummeted during the global economic slowdown (see 'Vaccination rising'). The WHO now concedes that few countries will attain anywhere near the targets.

The United States has some grounds for concern. Last year saw 644 cases in 27 states, a record high since 2000. And by 2013, the proportion of eligible children who had been vaccinated had dropped by 2% since 2004, to 91%. But the nation's vaccination coverage remains high compared with other countries (see 'Vaccination coverage worldwide'), and the number of cases is also small. The recent US outbreak infected 121 people. But China saw 107,000 people infected last year, and the Democratic Republic of the Congo (DRC) had 89,000 cases in 2013 (see 'Largest outbreaks'). The proportion of people who die varies depending on where you are (see 'Different conditions, different disease').

The last pockets of a disease are always the hardest to eliminate, as shown by polio eradication, which has been 'just around the corner' for years. But if the Measles & Rubella Initiative can get vaccinations back on track worldwide, measles may yet follow smallpox, the only killer human disease yet to be wiped out in the wild. ■

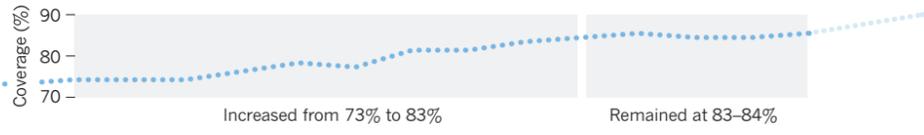


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Vaccination rising

The proportion of 1-year-olds vaccinated against measles worldwide has soared since 1980, and that has cut the number of cases. However, the global financial crisis in 2007-08, weak health-care systems and conflict have all hampered prevention efforts.

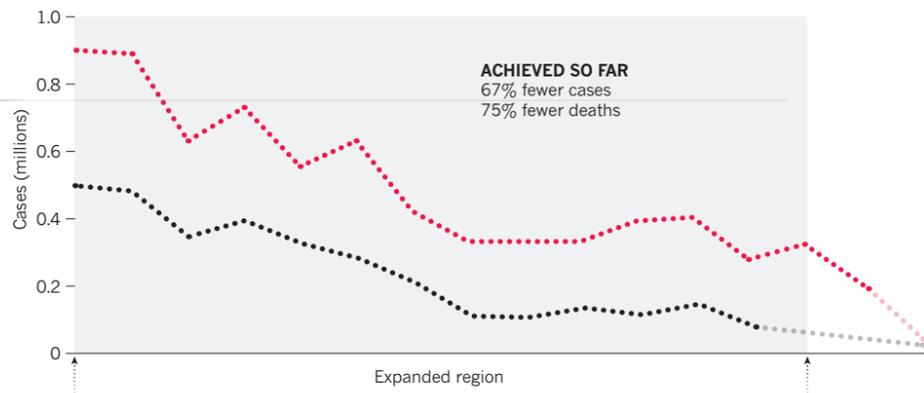
• Vaccination coverage



2015 VACCINATION TARGET
90% of children aged 1 year vaccinated.

Targets in trouble

The World Health Organization has set targets for 2015 that cut the number of cases and deaths and improve vaccination coverage from 2000 levels. But it looks unlikely that any of these will be met.



ACHIEVED SO FAR
67% fewer cases
75% fewer deaths

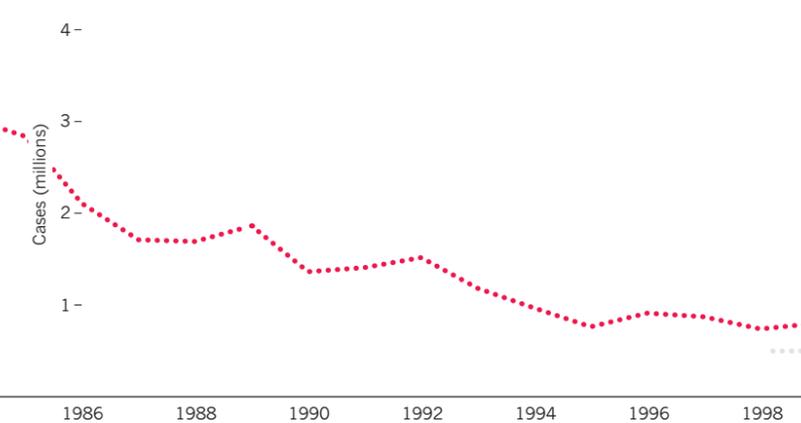
2015 INCIDENCE TARGET
Fewer than 36,500 cases worldwide.

2015 MORTALITY TARGET
Fewer than 26,750 deaths.

A fall ... then a stall

The number of cases has tumbled from a staggering 4.1 million in 1981 to 191,343 in 2014. But the decline stalled in 2007 and case numbers have plateaued since.

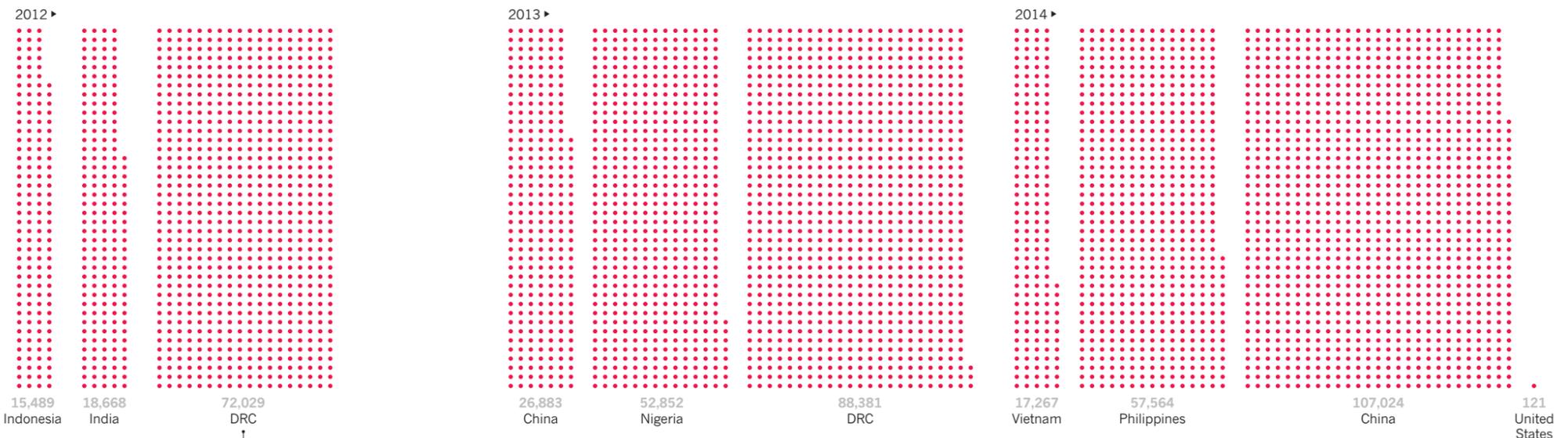
• Cases • Deaths



Largest outbreaks

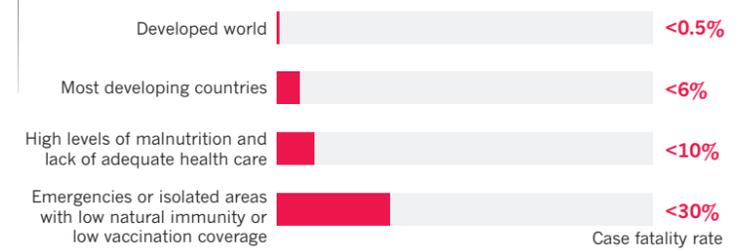
The US outbreak that sparked the recent debate over vaccination is tiny compared with ones elsewhere.

• = 100 cases



Different conditions, different disease

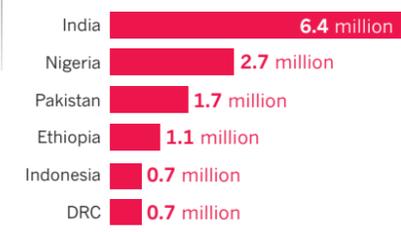
The proportion of infected people who die (case fatality rate) varies depending on many factors, including the quality of health care, nutrition and natural immunity.



SOURCE: WHO. DESIGN: JASIEK KRZYWIZTOFIAK/NATURE

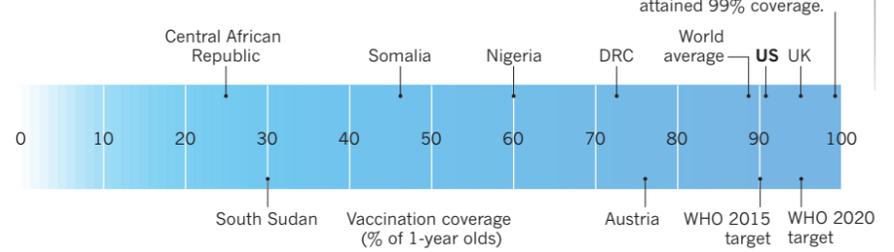
Vaccination lows

More than three-fifths of the estimated 21.5 million children who were not vaccinated against measles at 9 months of age in 2013 came from six countries.



Vaccination coverage worldwide

With 91% of 1-year-olds vaccinated, the United States comes in ahead of the WHO's 2015 target, but behind the 80 countries that have already attained the WHO's 2020 target of 95%.



36 countries, including Tanzania, Morocco, Greece, Cuba and South Korea, have attained 99% coverage.