Sarampo

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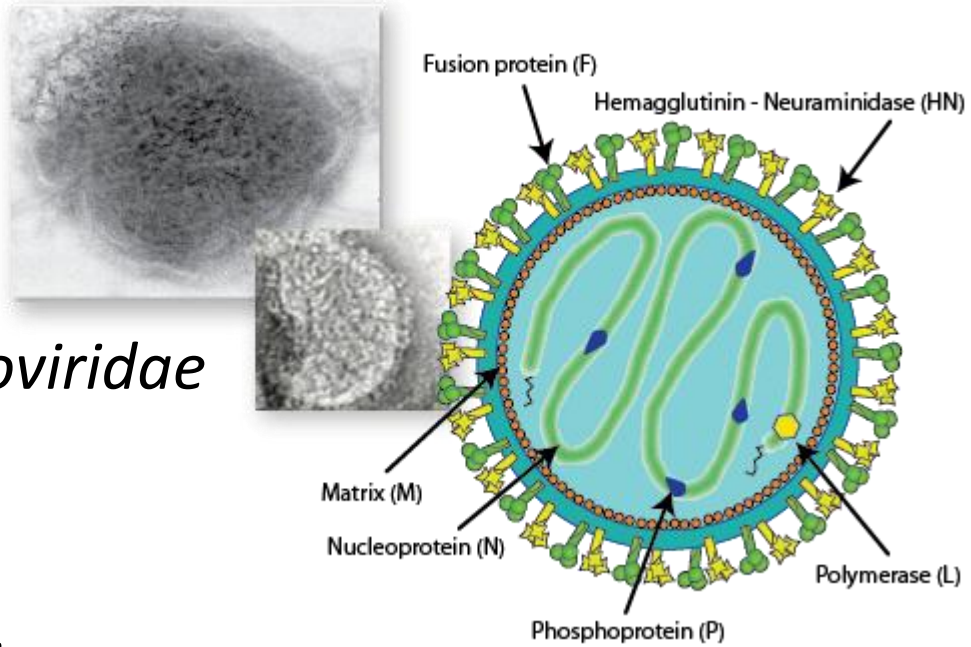
Outubro 2018

Sarampo

- Febre alta, acima de 38,5°C;
- Dor de cabeça;
- Exantema, inicia na face e região retroauricular
- Tosse;
- Coriza;
- Conjuntivite;
- Sinal de Koplik (manchas brancas mucosa oral) – antecede o exantema em 1-2 dias

Sarampo



www.humanviruses.org

- Vírus RNA, gênero *Morbillivirus*, família *Paramyxoviridae*
- Linfotrópicos, causam imunossupressão
- Homem: único hospedeiro
- Transmissão pessoa-pessoa, secreções respiratórias
- Período de incubação: média 10-14 dias (7–23)
- Altamente contagiosa – na ausência vacinação: 95% infecção até os 15 anos
- Complicações (OMA, pneumonia, diarreia) – 30%
  Crianças <1 ano e desnutridas
- Letalidade: 3-6% (até 30%)

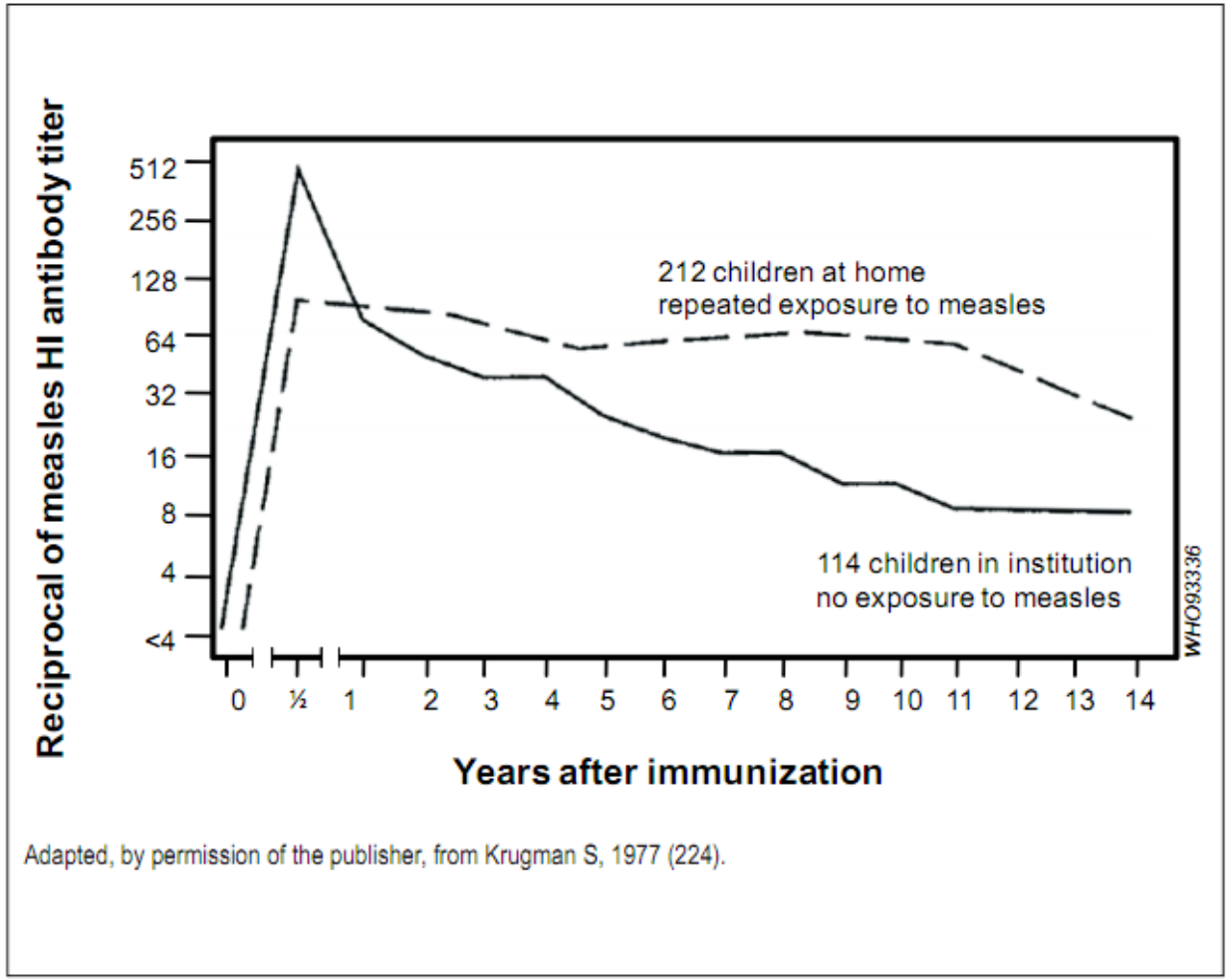
Vacina de sarampo

- Vírus vivo atenuado, via SC, 2 doses (0,5 ML ≥1000 UI)
- **Soroconversão** após 1 dose:
  - <6 meses: baixa (imaturidade SI / interferência Acs maternos)
  - 8-9 meses: 84% (IQR 72-95%)
  - 11-12 meses: 92,5% (IQR, 84,8–97%); Anticorpos >> avidez
- 97% crianças com falha primária respondem a 2ª dose
- Resposta imune humoral (IgM, IgG, IgA) e celular (CD4 e CD8)
- **Acs neutralizantes** longa duração (26-33 anos) **com reexposição ao vírus selvagem**
- Combinação com vacina de rubéola (SR), caxumba (SCR) e varicela (SCRV)

WHO position paper 2017

Falha vacinal e persistência de Acs após vacina de sarampo

- **Falha vacinal secundária** (após 1 dose)
  - 0 casos/100 vacinados, 1os 4 anos após a vacinação
  - 3,2 casos/100 vacinados, 5 - 10 anos após
  - 9,9 casos/100 vacinados, 10 -14 anos após



Adapted, by permission of the publisher, from Krugman S, 1977 (224).

WHO, 2009. The Immunological basis for immunization: Mesles

Persistência Acs anti-sarampo após D2 SCR

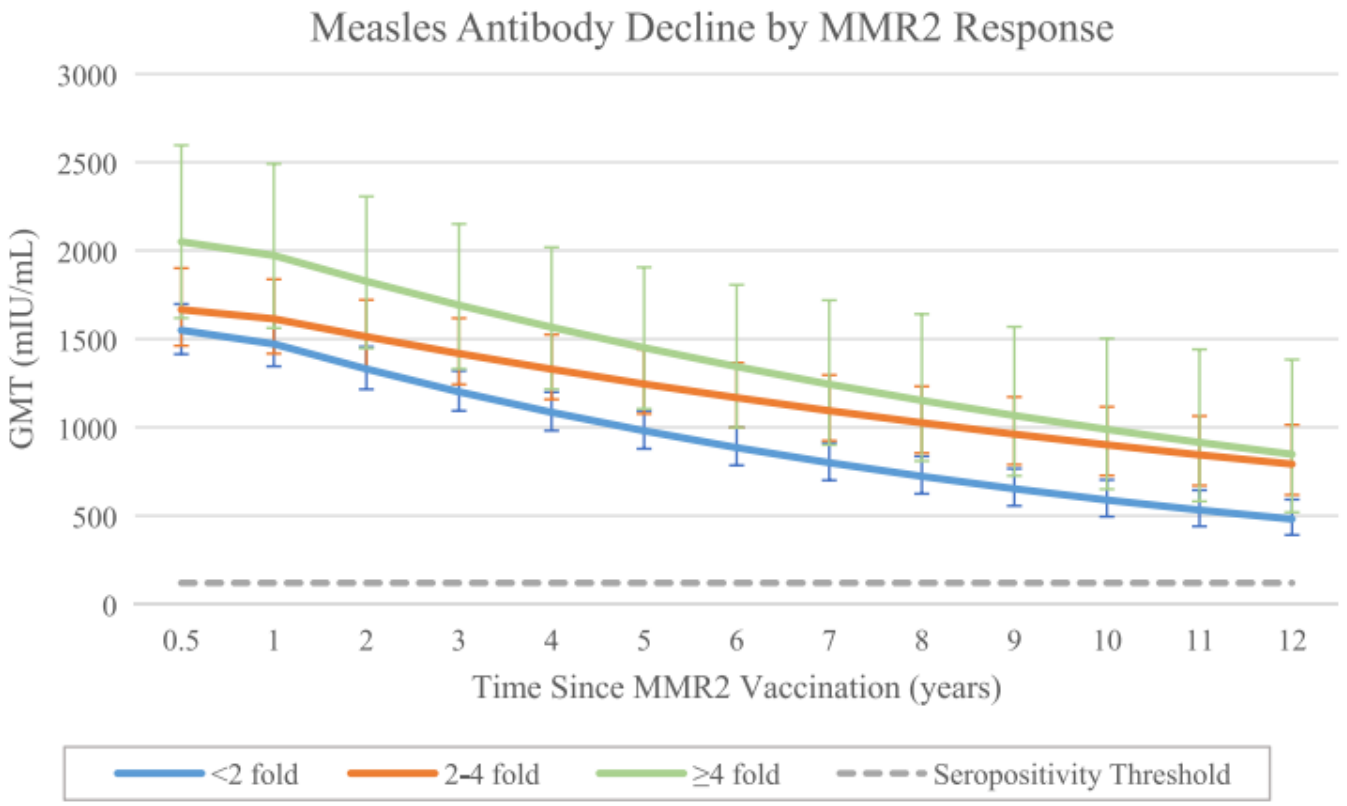


Fig. 1A. Measles Antibody Decline 6 months post-MMR2 to 12 years post-MMR2 by MMR2 response, adjusting for sex and baseline titer. ([1]Estimated based on a male individual with median baseline antibody titer (1722.2 mIU/mL). [2]Rate of decline per year: 9.7% among individuals with <2-fold response, 6.3% among those with 2 to 4-fold response, and 7.4% among those with ≥4-fold response. [3]MMR2 response defined by dividing one month post-MMR2 titer by pre-vaccination (baseline) titer.)

Seagle et al. / Vaccine 36 (2018) 818–826

Vacina de sarampo

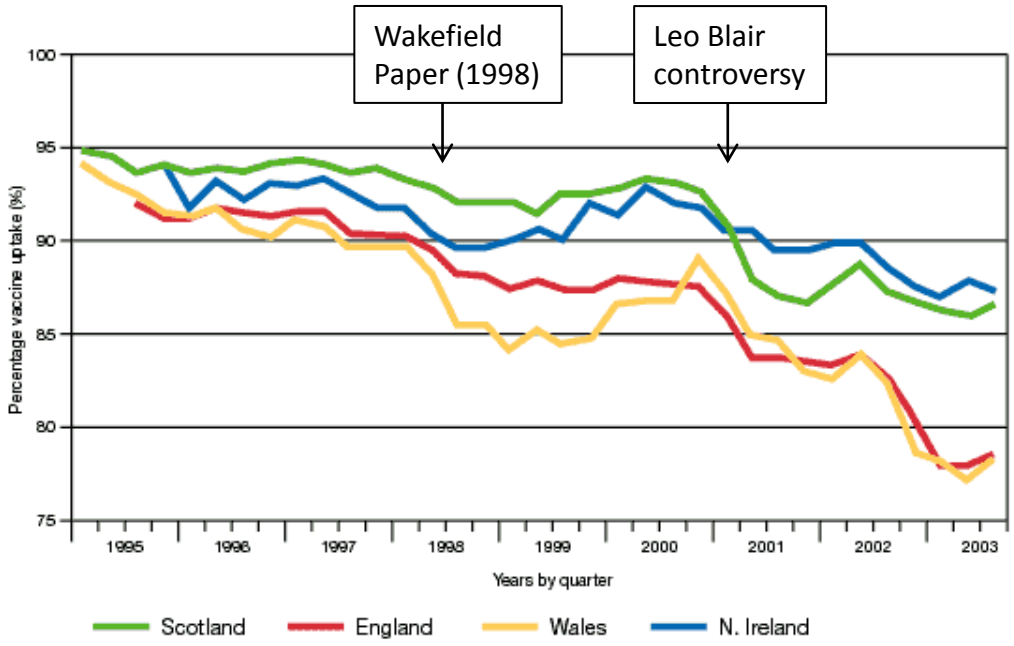
- **Eventos Adversos**
  - Febre (5-15%) , exantema (2-5%), quadro catarral e conjuntivite (6%)
  - Reações alérgicas: raras (1/100 mil): associada gelatina e neomicina

- **Contraindicações**:
  - Gestação
  - Imunodepressão
- **Não há contraindicação de vacinação para pessoas com alergia a ovo** (vírus cultivados em culturas de células de embrião de galinha)

Vacina tríplice viral (SCR) e Autismo

FALSO

- 1998, Wakefield: Relato 12 casos possível associação vacina SCR e autismo
- The *Guardian* e *The Independent* relataram artigo na 1ª página
- Cobertura vacinal UK ↓ 92% (1996) → 84% (2002), Londres: 61% (2003)
- → Reemergência sarampo
- 2000s, investigação (Brian Deer): conflito de interesses, conduta antiética e fraudulenta do 1º autor
- 10 de 11 coautores retiraram autoria
- 2010, Lancet retirou a publicação
- Wakefield perdeu registro profissional



→ Estudos epidemiológicos não encontraram associação SCR e autismo

Taylor. Vaccine, 17 June 2014; 32(19): 3623–3629

The New England
Journal of Medicine

VOLUME 347 NOVEMBER 7, 2002 NUMBER 19

A POPULATION-BASED STUDY OF MEASLES, MUMPS, AND RUBELLA VACCINATION AND AUTISM

KREESTEN MELDGAARD MADSEN, M.D., ANDERS HVIID, M.SC., MOGENS VESTERGAARD, M.D., DIANA SCHENDEL, PH.D., JAN WOHLFAHRT, M.SC., POUL THORSEN, M.D., JØRN OLSEN, M.D., AND MADS MELBYE, M.D.

Abstract

BACKGROUND: It has been suggested that vaccination against measles, mumps, and rubella (MMR) is a cause of autism.

METHODS: We conducted a retrospective cohort study of all children born in Denmark from January 1991 through December 1998. The cohort was selected on the basis of data from the Danish Civil Registration System, which assigns a unique identification number to every live-born infant and new resident in Denmark. MMR-vaccination status was obtained from the Danish National Board of Health. Information on the children's autism status was obtained from the Danish Psychiatric Central Register, which contains information on all diagnoses received by patients in psychiatric hospitals and outpatient clinics in Denmark. We obtained information on potential confounders from the Danish Medical Birth Registry, the National Hospital Registry, and Statistics Denmark.

RESULTS: Of the 537,303 children in the cohort (representing 2,129,864 person-years), 440,655 (82.0 percent) had received the MMR vaccine. We identified 316 children with a diagnosis of autistic disorder and 422 with a diagnosis of other autistic-spectrum disorders. After adjustment for potential confounders, the relative risk of autistic disorder in the group of vaccinated children, as compared with the unvaccinated group, was 0.92 (95 percent confidence interval, 0.68 to 1.24), and the relative risk of another autistic-spectrum disorder was 0.83 (95 percent confidence interval, 0.65 to 1.07). There was no association between the age at the time of vaccination, the time since vaccination, or the date of vaccination and the development of autistic disorder.

CONCLUSIONS: This study provides strong evidence against the hypothesis that MMR vaccination causes autism.

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paper by Wakefi
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Early report

Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children

A J Wakefield, S H Murch, A Anthony, J Linnell, D M Casson, M Malik, M Berelowitz, A P Dhillon, M A Thomson, P Harvey, A Valentine, S E Davies, J A Walker-Smith

Summary

Background We investigated a consecutive series of children with chronic enterocolitis and regressive developmental disorder.

Methods 12 children (mean age 6 years [range 3–10], 11 boys) were referred to a paediatric gastroenterology unit with a history of normal development followed by loss of acquired skills, including language, together with diarrhoea and abdominal pain. Children underwent gastroenterological, neurological, and developmental assessment and review of developmental records. Ileocolonoscopy and biopsy sampling, magnetic-resonance imaging (MRI), electroencephalography (EEG), and lumbar puncture were done under sedation. Barium follow-through radiography was done where possible. Biochemical, haematological, and immunological profiles were examined.

Findings Onset of behavioural symptoms was associ... by the parents, with measles, mumps, and rub... vaccination in eight of the 12 children, with measl... infection in one child, and otitis media in an... All 1... children had intestinal abnormalities ...rangi... from lymphoid nodular hyperplasia to a...hoid u...ration. Histology showed patchy chronic inflam...tion ... in 11 children and reactive ileal ...mpho... perplasia in seven, but no granulomas. Be...ioural diso...s included autism (nine), disintegrativ...sys...sis (one), a... possible postviral or vaccinal encephalitis ...p). There were no focal neurological ab...malities and ...l and EEG tests were normal. Abnor...l laboratory results ...re significantly raised urinary ...thylmal...c acid compared with age-matched control... ...03), low haemoglobin in four children, ... low s...m IgA in ...r children.

Inter...tation ...e ident... associated gastrointestinal dis...se and ...evelopmental regression in a group of prev...ly ...mal chil...n, which was generally associated in time ... possible environmental triggers.

Lancet 199... 351: 637–41
See Commentary page

Inflammatory Bowel Disease Study Group, University Departments of Medicine and Histopathology (A J Wakefield FRCS, A Anthony MB, J Linnell PhD, A P Dhillon MRCPath, S E Davies MRCPath) **and the**

Introduction

We saw several children who, after a p...d of apparent normality, lost acquired skills, includ...g com...nication. They all had gastrointestinal ...mptoms, ...luding abdominal pain, diarrhoea, and ...ating and, i... some cases, food intolerance. We ...scribe... clinical f...lings, and gastrointestinal featur... of these chi...en.

Patients and meth...ds

12 children, cons...tively ...rred to t... department of paediatric gastr...terology ... a hi...y of a pervasive developmental ...der with loss ...ed skills and intestinal symptoms ...arrh... abdominal ...in, bloating and food intolerance), were inv...gated. All children were admitted to the ward f... week, accomp...d by their parents.

Clinical investigations

...e took histor... including details of immunisations and ...sure to infec...s diseases, and assessed the children. In 11 ca... the histor... was obtained by the senior clinician (JW-S). Neur... and psychiatric assessments were done by consultant staff (PH, MB) with HMS-4 criteria.[4] Developmental ...s included a review of prospective developmental records from parents, health visitors, and general practitioners. Four children did not undergo psychiatric assessment in hospital; all had been assessed professionally elsewhere, so these assessments were used as the basis for their behavioural diagnosis.

After bowel preparation, ileocolonoscopy was performed by SHM or MAT under sedation with midazolam and pethidine. Paired frozen and formalin-fixed mucosal biopsy samples were taken from the terminal ileum; ascending, transverse, descending, and sigmoid colons, and from the rectum. The procedure was recorded by video or still images, and were compared with images of the previous seven consecutive paediatric colonoscopies (four normal colonoscopies and three on children with ulcerative colitis), in which the physician reported normal appearances in the terminal ileum. Barium follow-through radiography was possible in some cases.

Also under sedation, cerebral magnetic-resonance imaging (MRI), electroencephalography (EEG) including visual, brain stem auditory, and sensory evoked potentials (where compliance made these possible), and lumbar puncture were done.

Laboratory investigations

Thyroid function, serum long-chain fatty acids, and cerebrospinal-fluid lactate were measured to exclude known causes of childhood neurodegenerative disease. Urinary methylmalonic acid was measured in random urine samples from eight of the 12 children and 14 age-matched and sex-matched normal controls, by a modification of a technique described previously.[5] Chromatograms were scanned digitally on

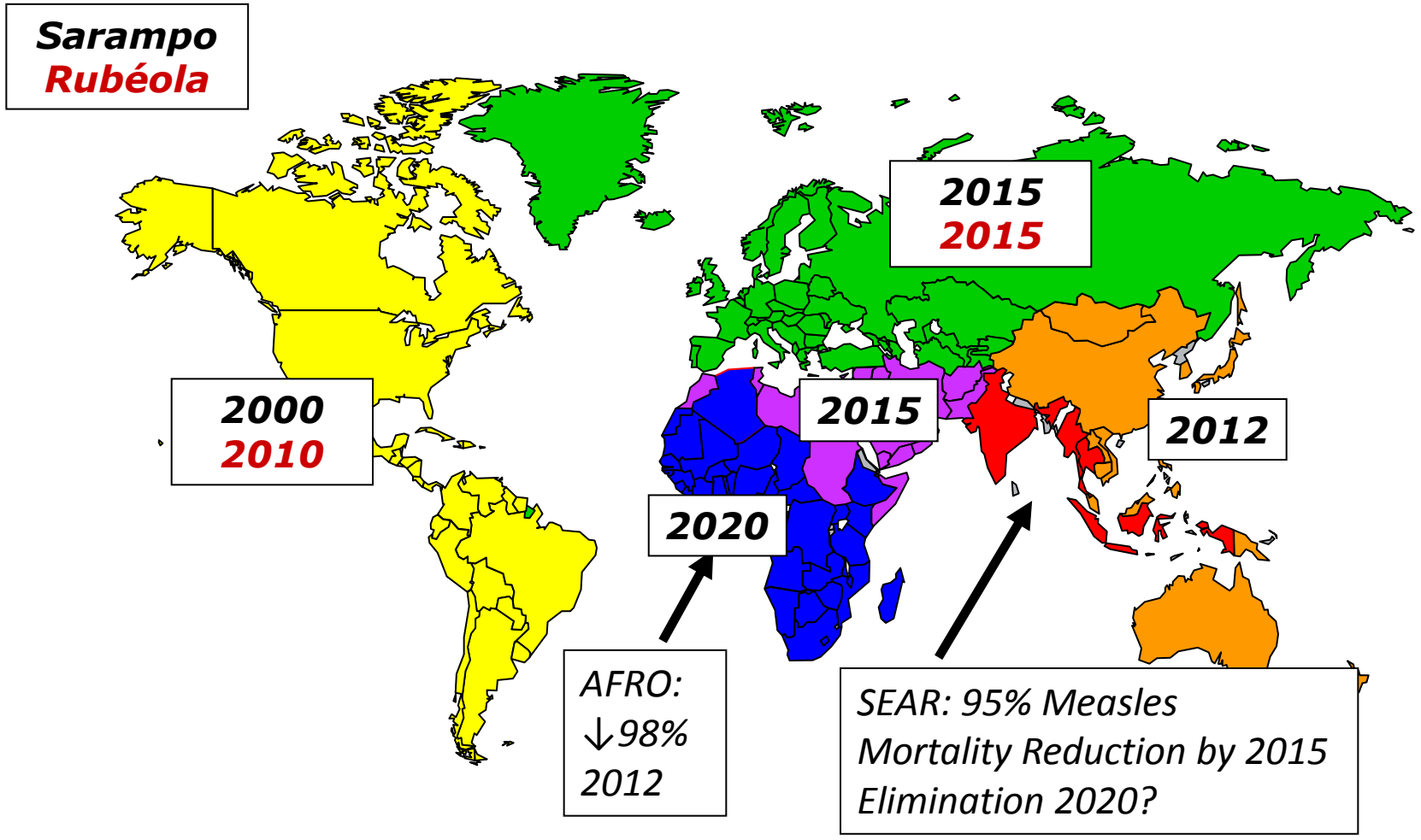
Published Online
February 2, 2010
DOI:10.1016/S0140-6736(10)60175-4

Campanha de Eliminação do Sarampo

- 2001, American Red Cross, UN Foundation, US-CDC, UNICEF, OMS:
- **Estratégia**: 2 doses vacina SR na rotina + atividades complementares (campanhas de seguimento);
  Fortalecimento da vigilância e notificação da doença;
  Resposta rápida à surtos
- 2010, Assembleia Mundial de Saúde, Meta para 2015:
- ↑ cobertura 1ª dose ≥90% (nacional) e ≥80% (todas as unidades administrativas)
- ↓ incidência sarampo para <5 casos / milhão
- ↓ mortalidade por sarampo em ≥95% (x 2000): 2015: 134.200 mortes (↓79%)
- Eliminar sarampo em 5 das 6 regiões OMS (2020)

WHO. Progress in global control and regional elimination of measles, 2000–2011. Weekly Epid Rec. Jan 18, 2013;
http://www.who.int/immunization/sage/meetings/2016/october/1_MTR_Report_Final_Color_Sept_20_v2.pdf

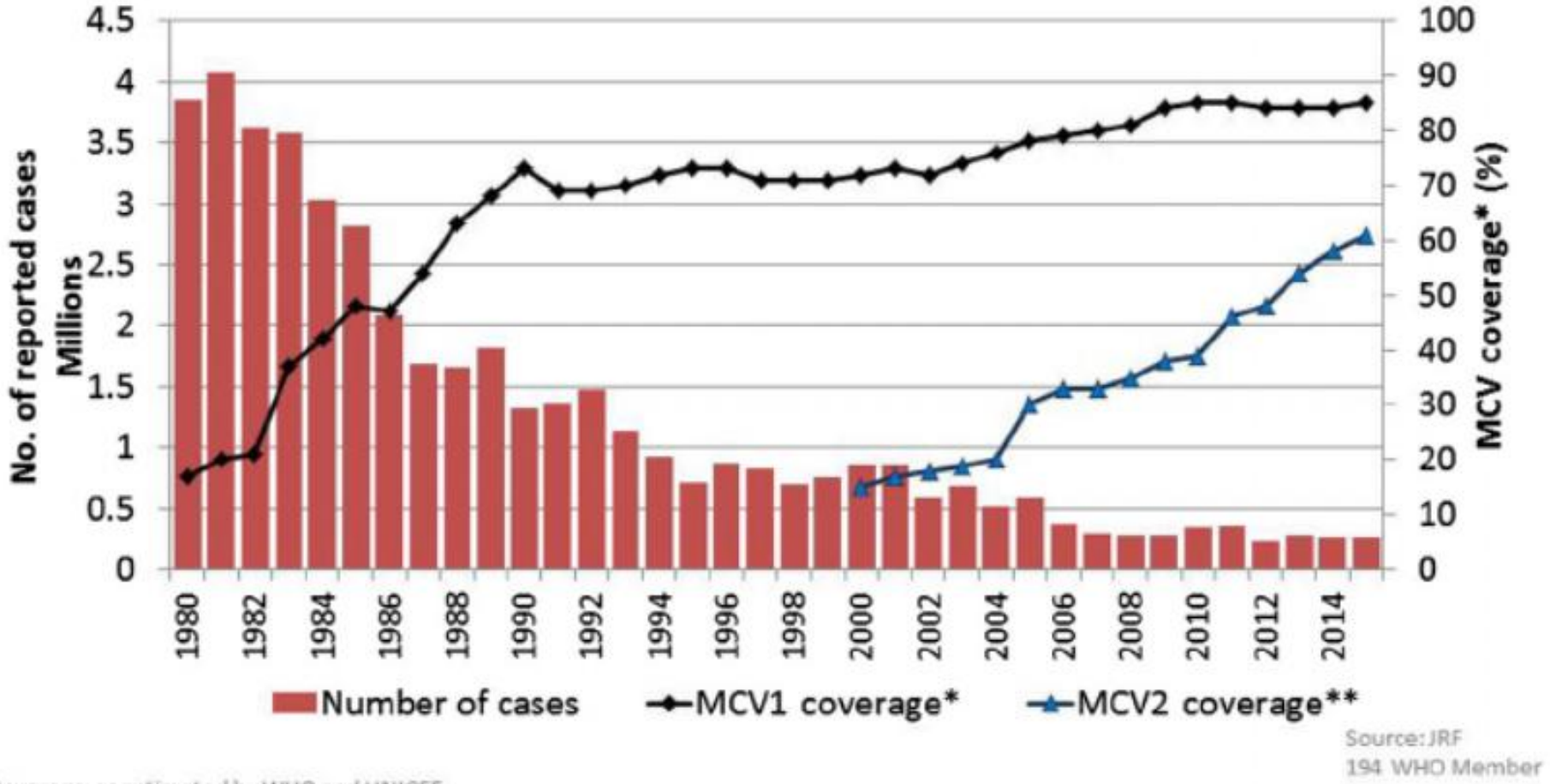
Metas de eliminação do sarampo e rubéola, Março 2012



Americas, Europe, E. Mediterranean, W. Pacific, Africa have measles elimination goals
Americas and Europe have rubella elimination goals

GLOBAL MEASLES & RUBELLA STRATEGIC PLAN. 2012-2020

Sarampo e cobertura vacinal D1 e D2, 1980-2015



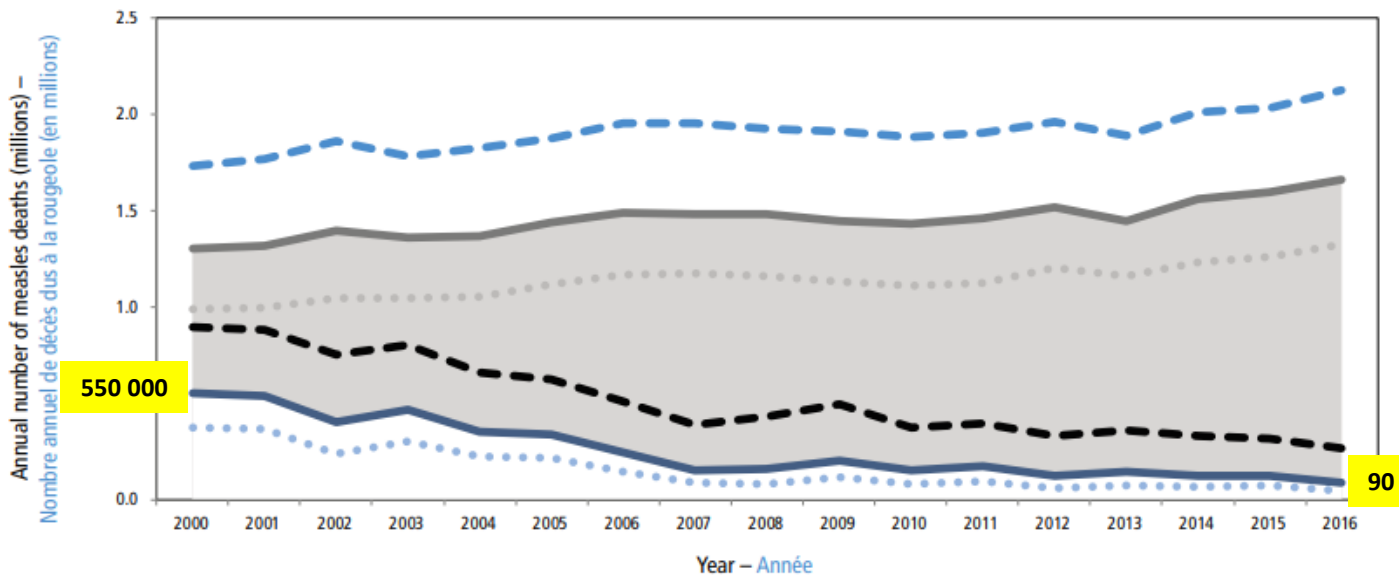
Coverage as estimated by WHO and UNICEF.
MCV2 estimates are only available from 2000 when global data collection started, however some countries introduced the vaccine earlier.

2017:
D1 85%
D2 67%

W.A. Orenstein et al./Vaccine 36 (2018) A35–A42

Figure 1 **Global estimated number of measles deaths with vaccination and global estimated number of measles deaths in absence of vaccination, 2000–2016***

Figure 1 **Nombre estimé dans le monde de décès dus à la rougeole dans le cadre d'une vaccination et nombre estimé dans le monde de décès dus à la rougeole en absence de vaccination, 2000-2016***



↓79%

Deaths prevented by vaccination (numbers indicate the cumulative number of deaths prevented in millions) – Décès évités grâce à la vaccination (les chiffres indiquent le nombre cumulé de décès, en millions)

Estimated number of measles deaths in absence of vaccination – Nombre estimé de décès dus à la rougeole en l'absence de vaccination

95% upper confidence interval of estimated measles deaths in absence of vaccination – Limite supérieure de l'intervalle de confiance à 95% du nombre estimé de décès dus à la rougeole en l'absence de vaccination

95% lower confidence interval of estimated measles deaths in absence of vaccination – Limite inférieure de l'intervalle de confiance à 95% du nombre estimé de décès dus à la rougeole en l'absence de vaccination

Estimated number of measles deaths with vaccination – Nombre estimé de décès dus à la rougeole dans le cadre d'une vaccination

95% upper confidence interval of estimated measles deaths with vaccination – Limite supérieure de l'intervalle de confiance à 95% du nombre estimé de décès dus à la rougeole dans le cadre d'une vaccination

95% lower confidence interval of estimated measles deaths with vaccination – Limite inférieure de l'intervalle de confiance à 95% du nombre estimé de décès dus à la rougeole dans le cadre d'une vaccination

* Compared with no measles vaccination, measles vaccination prevented an estimated cumulative total of 20.4 million deaths during 2000–2016. – Comparativement à l'absence de vaccination contre la rougeole, on estime à 20.4 millions le nombre de décès évités grâce à la vaccination antirougeoleuse au cours de la période 2000-2016.

Recomendações vacina de SCR no PNI

Rotina

- **1ª dose: 12 meses (SCR)**
  2ª dose: 15 meses (SCR+Var)
- 5 – 29 anos: 2 doses SCR (intervalo 30 dias)
- 30 – 58 anos (nascidos a partir 1960): 1 dose SCR independente de doença prévia
- > 50 anos: não há necessidade de vacinar

- **Viajantes internacionais**: a partir de 6 meses (até 60 anos)
- **Todos**:
  - **Profissionais de saúde (2 doses)**
  - População institucionalizada
  - Trabalhadores da educação
  - Construção civil
  - Setor de turismo: motoristas de taxi, companhias aéreas, transporte rodoviário, hotéis, restaurantes, profissionais sexo

- Só são consideradas doses válidas, se registradas em cartão de vacinação
- Vacinas administradas crianças <12 meses são consideradas inválidas

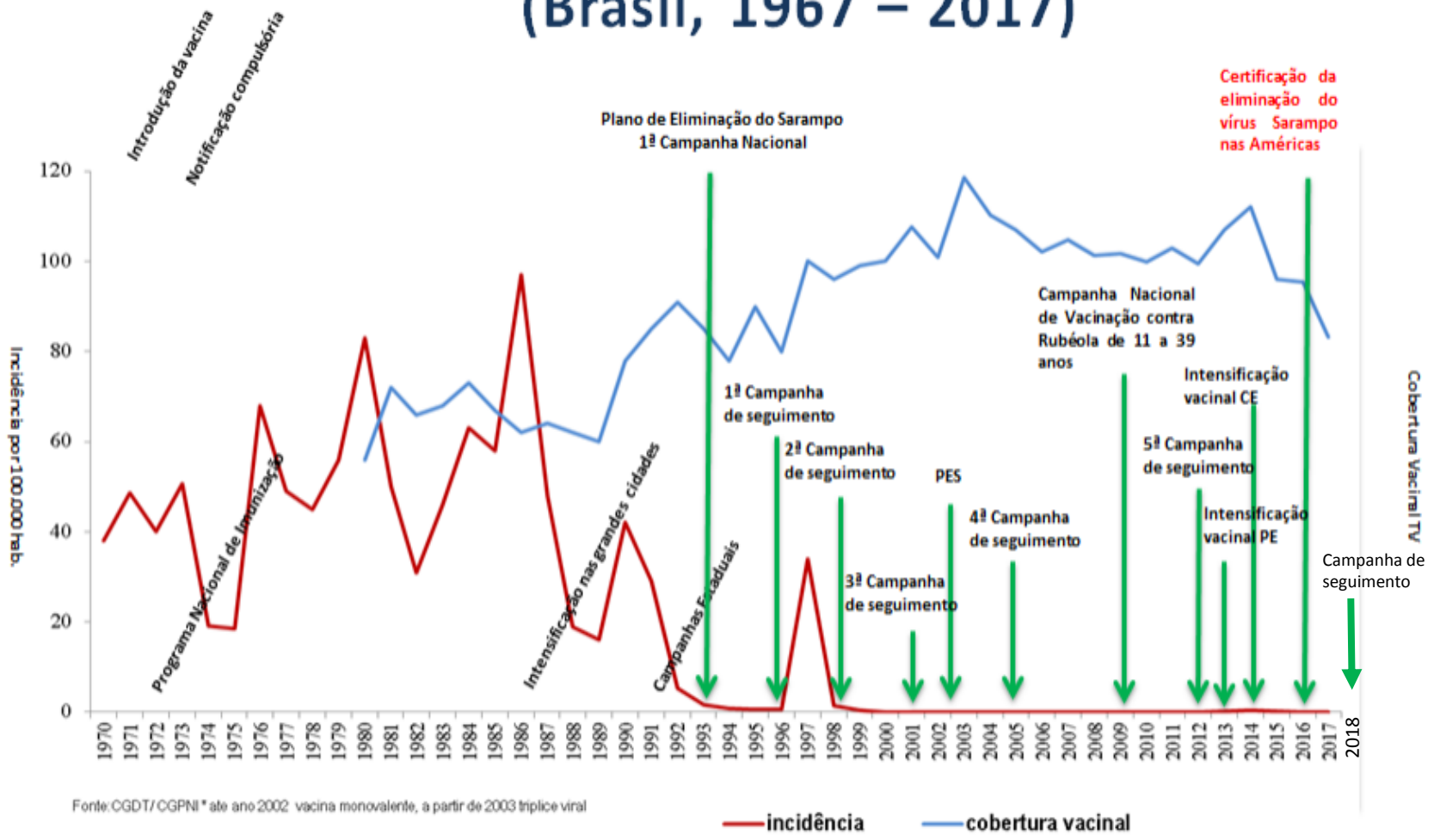
Recomendações vacina de SCR (ou SR)

- **Controle da doença: ≥95% cobertura vacinal 2 doses**
- **Campanhas de seguimento (~ a cada 5 anos)**
  - Todas as crianças de 18 meses a 5 anos (incompletos), independente vacinação prévia (2011)
  - Objetivo: ↑cobertura vacinal 1ª e 2ª dose
    ↓ falhas vacinais 1^{aria} e 2^{aria}
- **Bloqueio***
  - **Até 72 horas** após exposição a caso suspeito Sarampo ou Rubéola
  - Crianças 6 a 11 meses (dose não válida para rotina)
  - 12 meses a 6 anos: 2 doses (intervalo 30 dias)

*Suspeita de Sarampo / Rubéola: Notificação Imediata (até 24 horas) à SES

http://www.cve.saude.sp.gov.br/htm/resp/pdf/sararub11_medida_controle.pdf
http://portal.saude.gov.br/portal/arquivos/pdf/nota_tecnica_cgdt_cgpni_8_2011.pdf
http://portal.saude.gov.br/portal/arquivos/pdf/orientacoes_dadas_aos_viajantes_08062011_site.pdf

Estratégias de Controle e Incidência do Sarampo (Brasil, 1967 – 2017)



1967 – Introdução da vacina monovalente
1969 – Notificação compulsória

http://portalms.saude.gov.br/saude-de-a-z/sarampo-situacao-epidemiologica

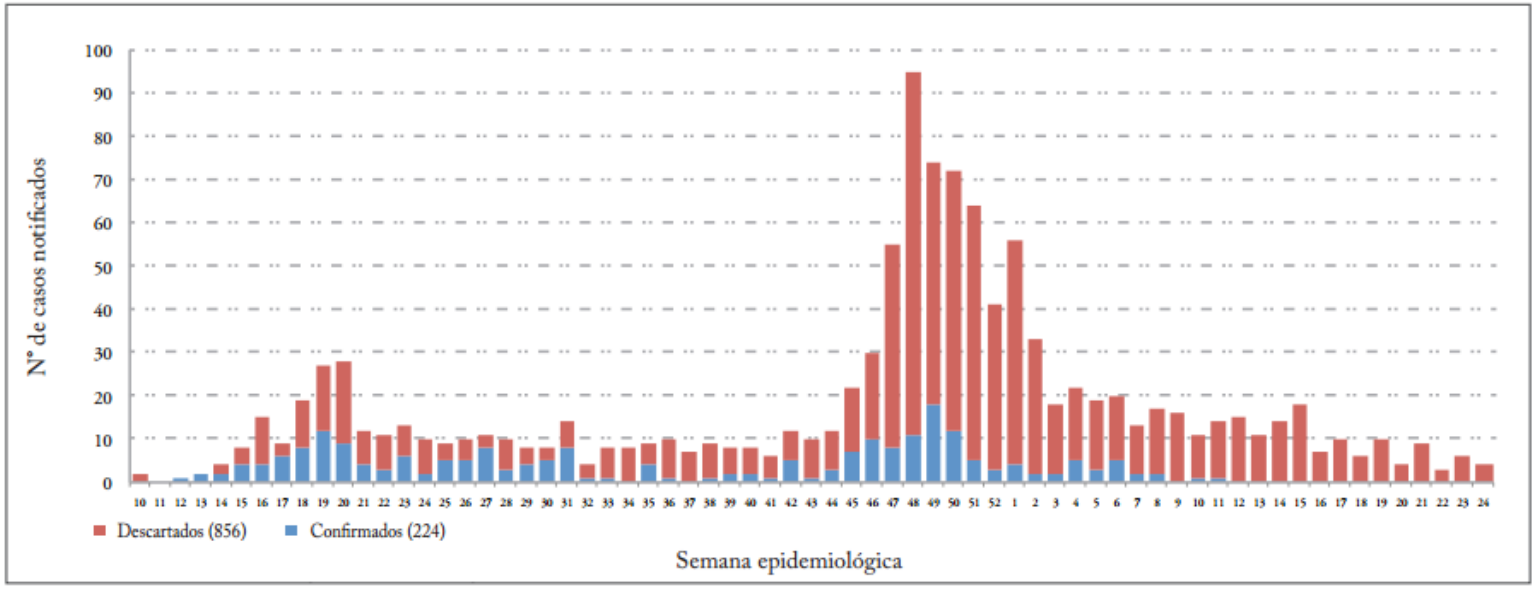
Sarampo no Brasil

- 2000: últimos casos autóctones. Desde então, todos os casos confirmados no país foram importados ou relacionados à importação
- 2006 - Surto no interior na **Bahia – 57 casos confirmados**. Genótipo D4
- 2010 - 3 surtos no **Pará, Rio Grande do Sul e Paraíba**, 1.727 casos suspeitos e **68 confirmados** (> surto PB – 57 casos). Genótipos D4 e B3
- 2011: **43 casos confirmados**: DF (1), MS (1), RJ (4), SP (27), MG (1), RS (7), BA (1) e PI (1). Genótipos D4 e G3
- 2012: 2 casos confirmados

Surto de sarampo em Pernambuco, 2013-2014

- Início: SE 10/2013 → SE 24/2014
- 1.151 casos suspeitos → **224 confirmados**
- 49% casos em <1 ano e 1/3 em crianças 1-4 anos não vacinadas
- 1 óbito criança 7 meses
- 24 municípios – região metropolitana Recife e interior
- Genótipo D8 (Europa)

Gráfico 7 – Número de casos de sarampo, segundo classificação final e semana epidemiológica – Pernambuco, 2013 a 2014



Semana	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Descartados	2	0	0	0	2	4	11	3	11	15	19	8	8	7	8	4	5	3	7	4	3	6	3	7	8	5	9	7	8	6	6
Confirmados	0	0	1	2	2	4	4	6	8	12	9	4	3	6	2	5	5	8	3	4	5	8	1	2	0	3	1	0	1	2	2

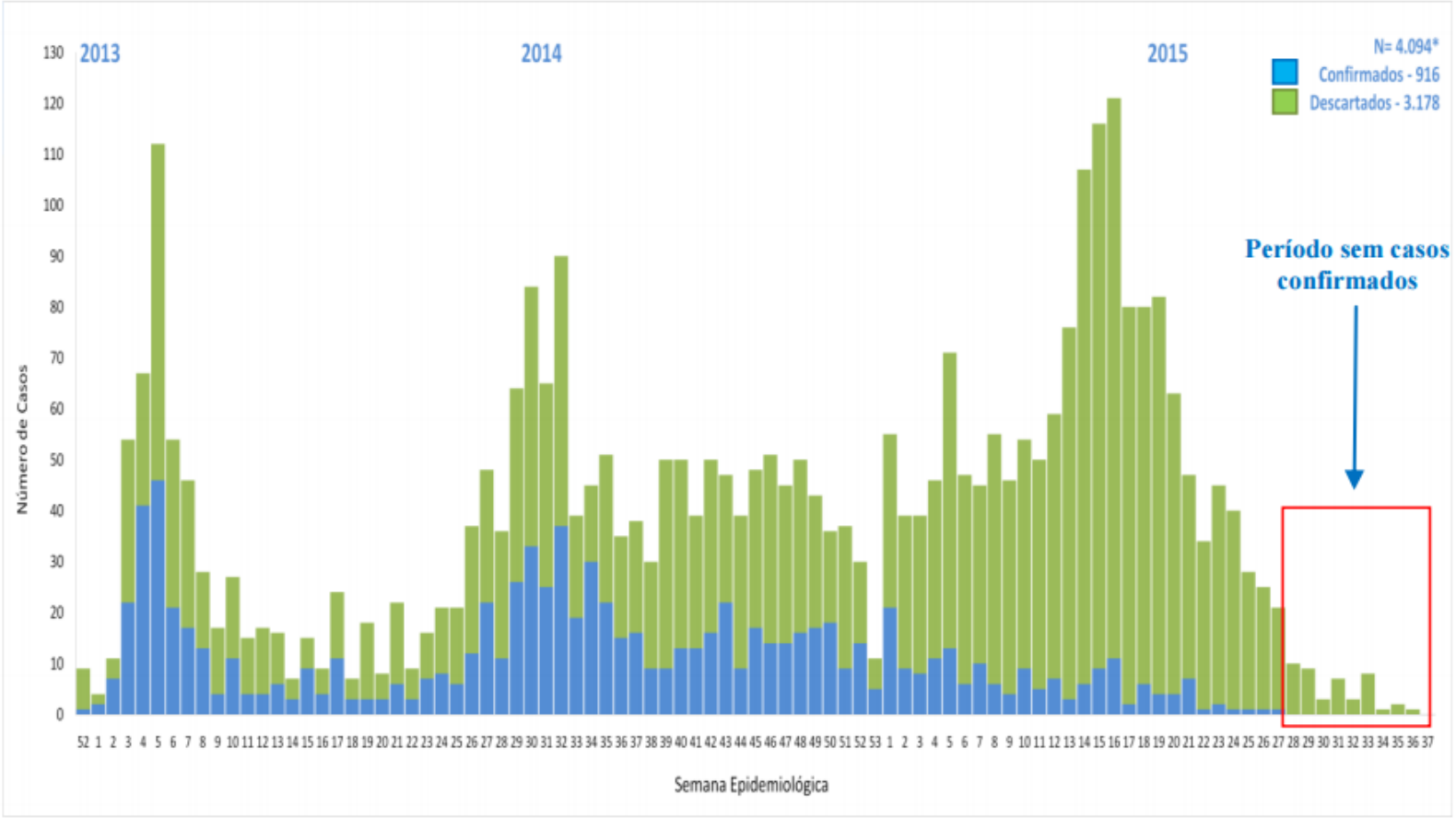
Semana	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Descartados	5	7	9	9	15	20	46	84	56	59	59	38	52	31	16	17	15	14	11	14	14	9	10	12	10	13	13	4	4	0	1
Confirmados	1	5	1	3	7	10	8	11	18	12	5	3	4	2	2	5	3	5	2	2	0	1	1	0	0	0	0	0	0	0	0

Fonte: SVS/MS.
Saúde Brasil 2013. http://bvsms.saude.gov.br/bvs/publicacoes/saude_brasil_2013_analise_situacao_saude.pdf

Surto de sarampo no Ceará, 2013-2015

- SE 52/2013 → SE 27/2015
- 4.094 suspeitos, **916 confirmados**
- crianças <5 anos não vacinadas: >ia
- Região metropolitana Fortaleza e municípios interior (Massapê, Sobral, Uruburetama, Forquilha, Caucaia e Maracanaú)
- Genótipo D8 (Europa)

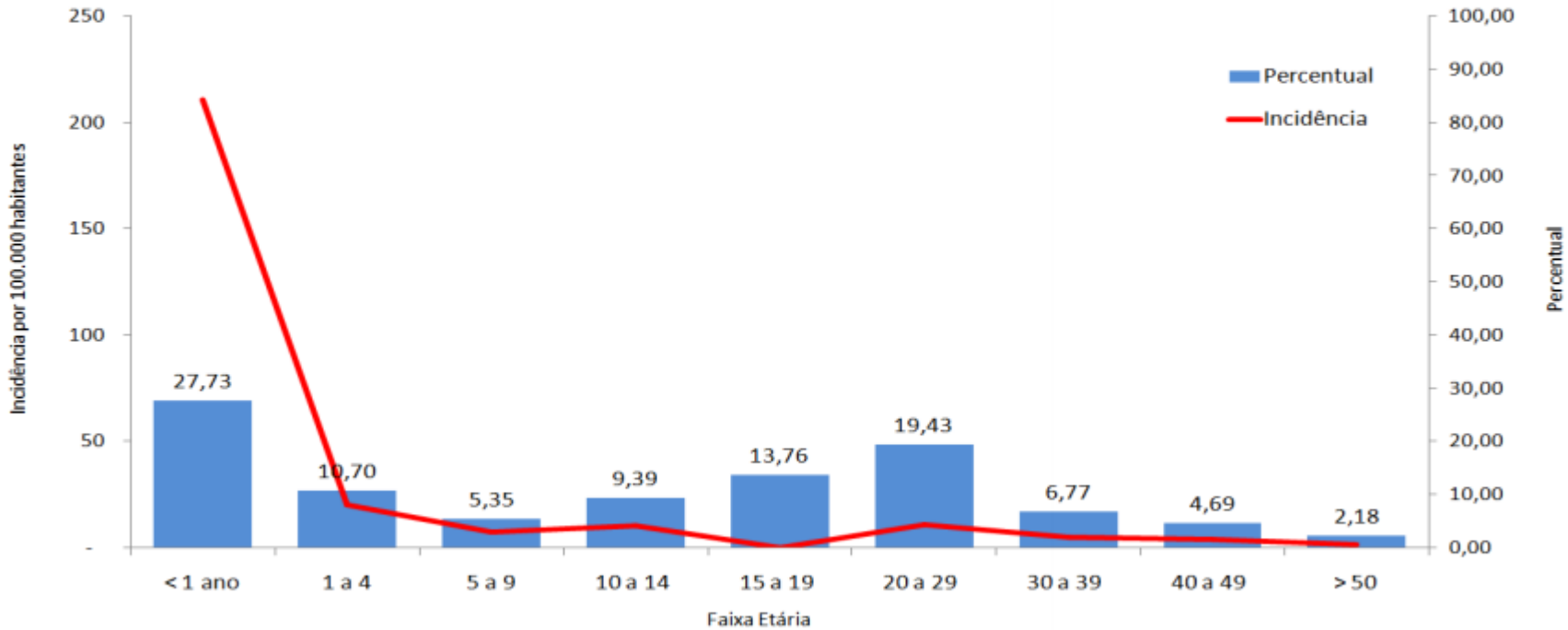
Figura 2. Casos de sarampo confirmados, descartados e em investigação epidemiológica, por semana epidemiológica da data do exantema, Ceará, 2013-2015*



Fonte:SESA/COPROM/NUVEP/SINANWEB.* Atualização em: 18/09/2015. Dados sujeitos à revisão.

Governo do estado do Ceará. Descrição do Surto de Sarampo no Ceará, 2013 a 2015. 24/09/2015

Figura 3. Casos confirmados de sarampo, incidência e percentual, por faixa etária, Ceará, 2013 a 2015*.



Fonte:SESA/COPROM/NUVEP/SINANWEB. *Atualização em: 18/09/2015. Dados sujeitos à revisão.

Governo do estado do Ceará. Descrição do Surto de Sarampo no Ceará, 2013 a 2015. 24/09/2015

Immunization Newsletter

Pan American Health Organization

Volume XXXVIII Number 3 | Immunize and Protect Your Family | September 2016

Region of the Americas is Declared Free of Measles

The declaration of measles elimination in the Region of the Americas at PAHO's 55th meeting of the Directing Council, 27 September 2016. Credit: PAHO/WHO.

On 27 September 2016 in Washington, DC, the Region of the Americas became the first in the world to have eliminated measles, a viral disease that can cause severe health problems, including pneumonia, brain swelling and even death. This achievement culminates a 22-year effort involving mass vaccination against measles, mumps and rubella throughout the Americas.

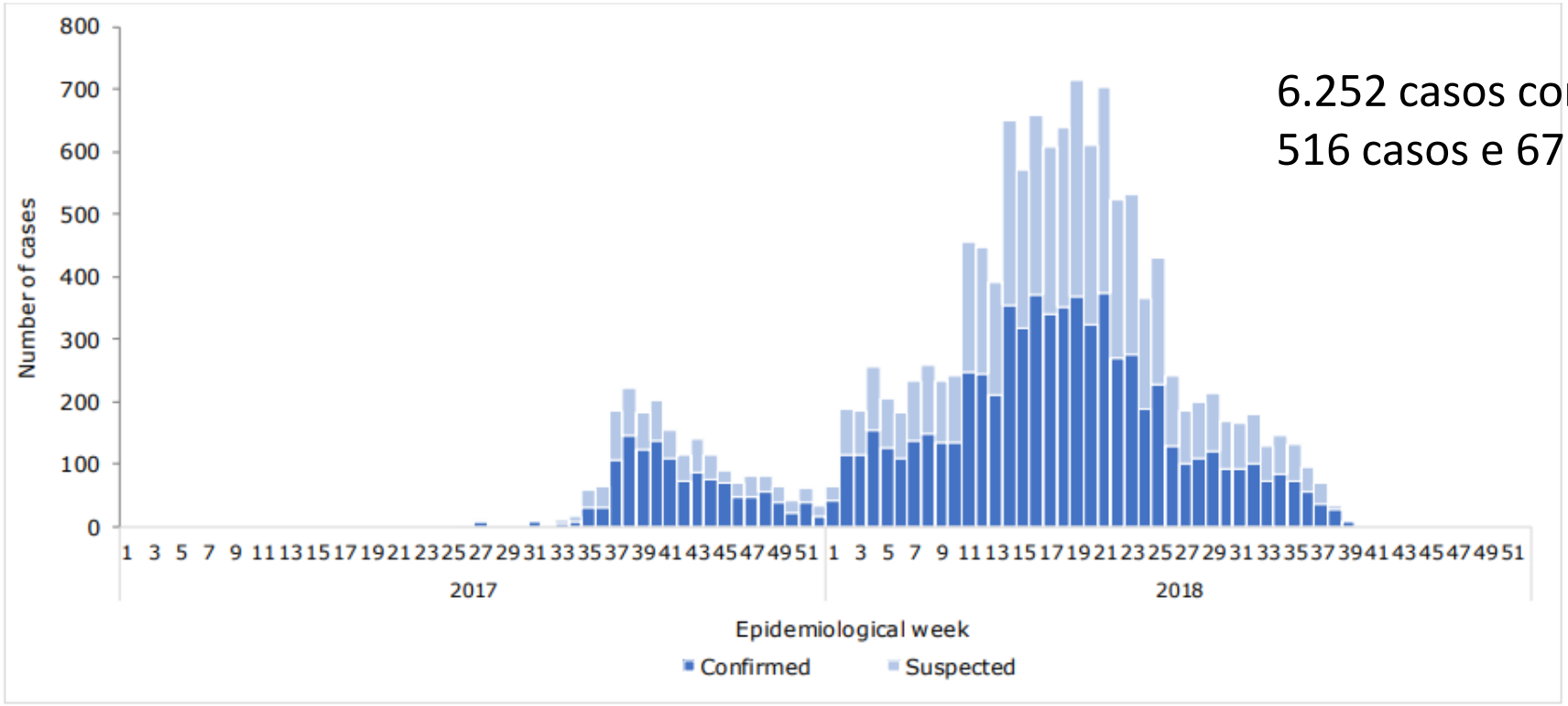
Smallpox Zero: A Tribute to Dr. Donald A. Henderson

Donald Ainslie Henderson, known as D.A. to many of his colleagues and field staff, passed away on 19 August 2016 surrounded by his family. He was well known for his leadership and guidance in establishing the immunization program that vanquished smallpox from the face of the earth under the auspices of the World Health Organization (WHO). To date, this is the only disease that has been eradicated using a vaccine.[2] D.A.'s field experience with smallpox actually started in the Region of the Americas; in June 1956 he was sent to Argentina to assist authorities with an outbreak of botulism, but during this visit he also went to investigate smallpox outbreaks in northern Argentina upon the request of health authorities.[3]

D.A. used the lessons learned from the Smallpox Eradication Program (SEP) to advocate, within WHO, for the establishment of what was to become the Expanded Program on Immunization (EPI) before he departed to become the dean of the School of Public Health at Johns Hopkins (now the Johns Hopkins Bloomberg School of Public Health) in 1977.

At Johns Hopkins, D.A. used the experiences he

Venezuela, Julho 2017 – Primeiros casos sarampo 2018: transmissão endêmica foi reestabelecida



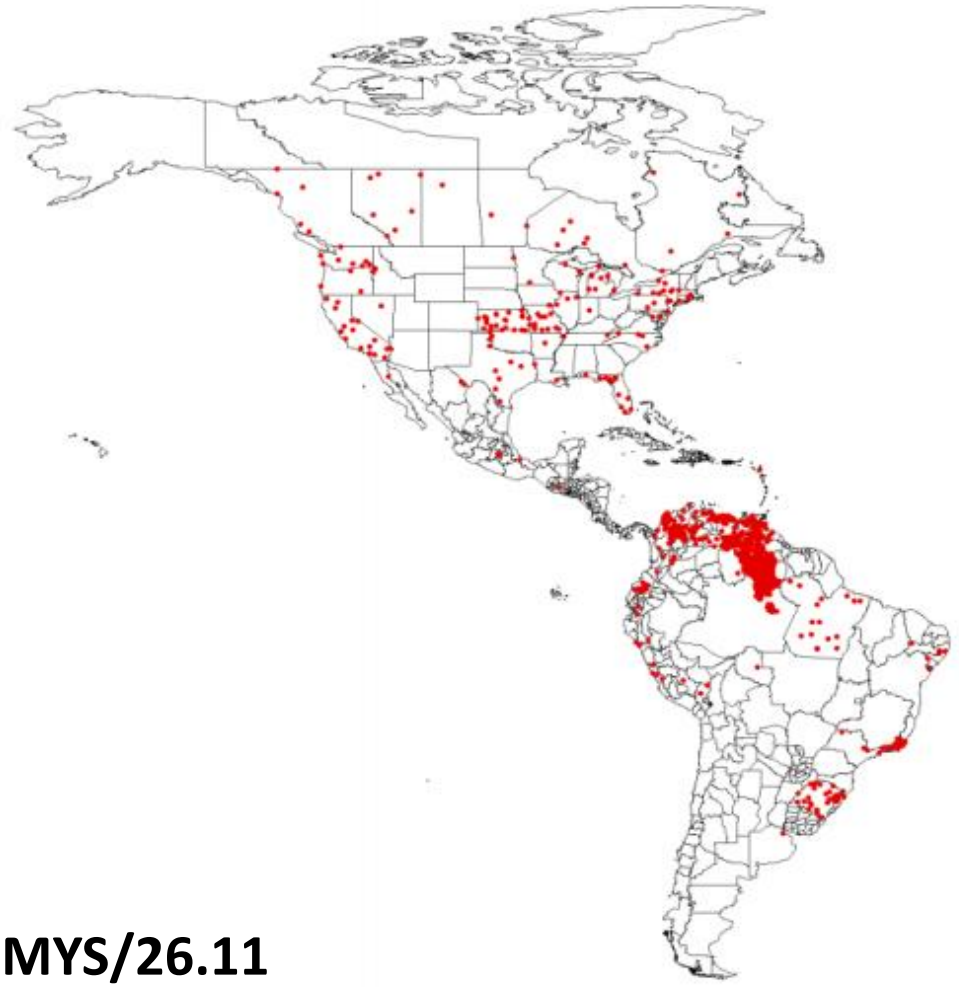
6.252 casos confirmados,
516 casos e 67 mortes em indígenas

Source: Venezuela Ministry of Popular Power for Health data and reproduced by PAHO/WHO

PAHO – Epidemiological Updates – Measles. 24/10/2018

Sarampo nas Américas em 2018 (até 23/10)

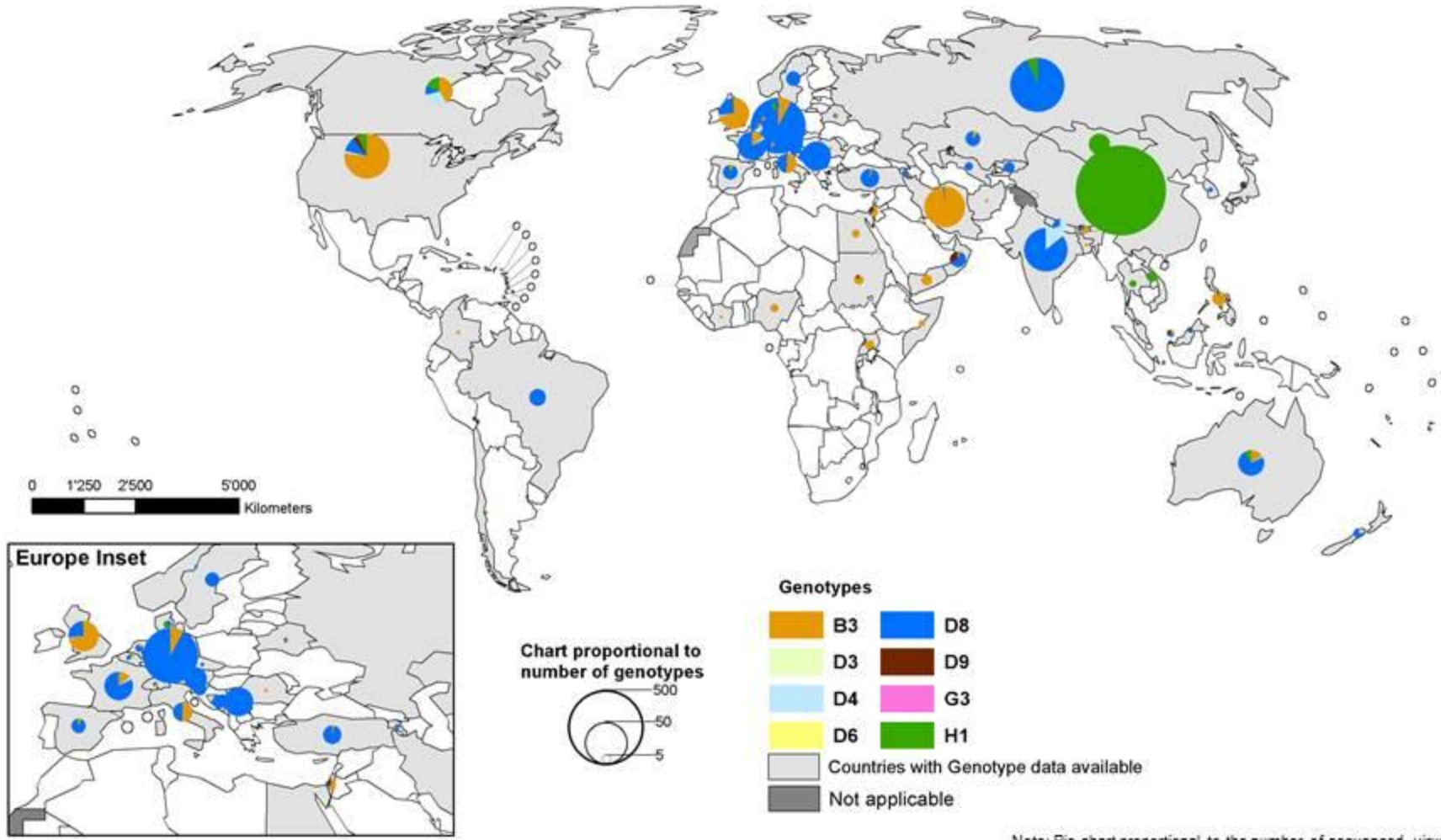
- **8.091 casos e 85 mortes em 11 países:**
  Venezuela – 5.525 casos, 73 mortes
  Brasil – 2.192 casos, 12 mortes
  EUA – 142 casos
  Colômbia – 129 casos
  Peru – 38 casos
  Canadá – 25 casos
  Equador – 19 casos
  Argentina – 14 casos
  México – 5 casos
  Guatemala – 1 caso
  Antigua e Barbuda – 1 caso
- **Genótipo D8, linhagem MVi/HuluLangat.MYS/26.11**



Source: PAHO/WHO's Immunization Unit. Data as of epidemiological week (EW) 41 of 2018.

PAHO – Epidemiological Updates – Measles. 24/10/2018

Distribution of measles genotypes year 2015



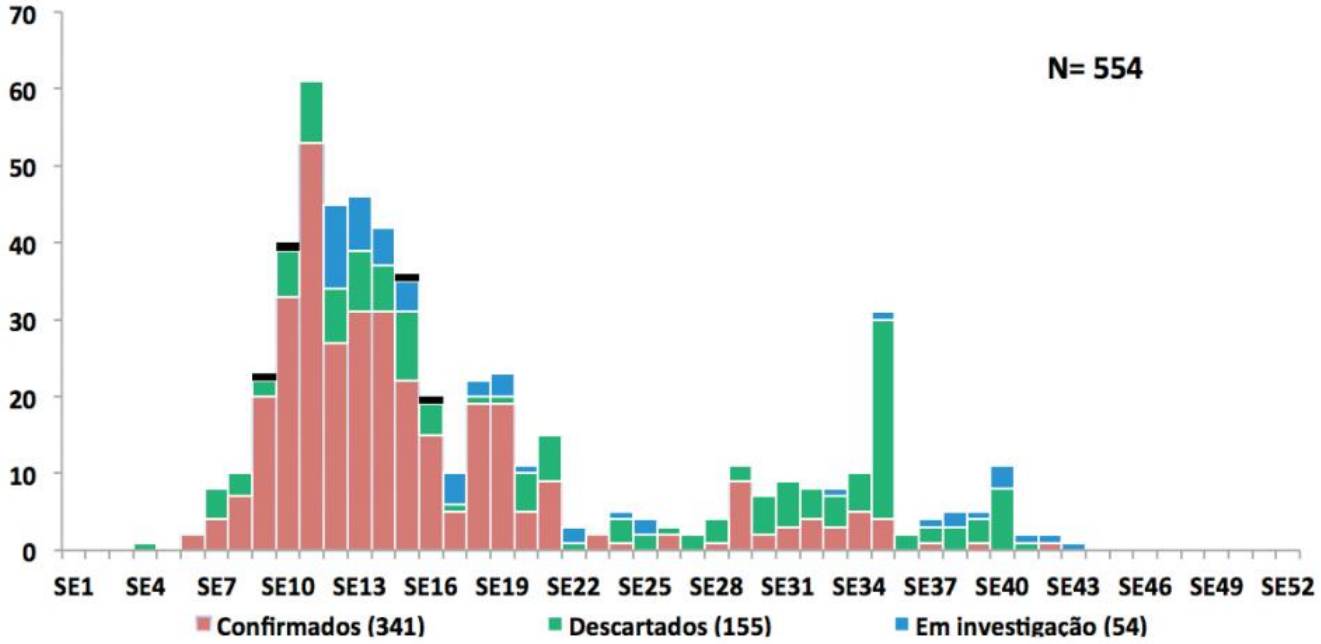
Note: Pie chart proportional to the number of sequenced viruses:
China data has been adjusted by size (total genotyped = 2862).

Data source: MeaNS Database;
Data in HQ as of 7 March 2016

WHO

Sarampo – Roraima, 2018

Distribuição dos casos notificados, confirmados e em investigação, por Semana Epidemiológica (SE) da data de início do exantema*



Fonte: Secretaria Estadual de Saúde do Roraima (SES/RR); Data 05/11/2018.
*Dados preliminares sujeitos à alteração.

Taxa de incidência por faixa etária, Roraima, 2018.*

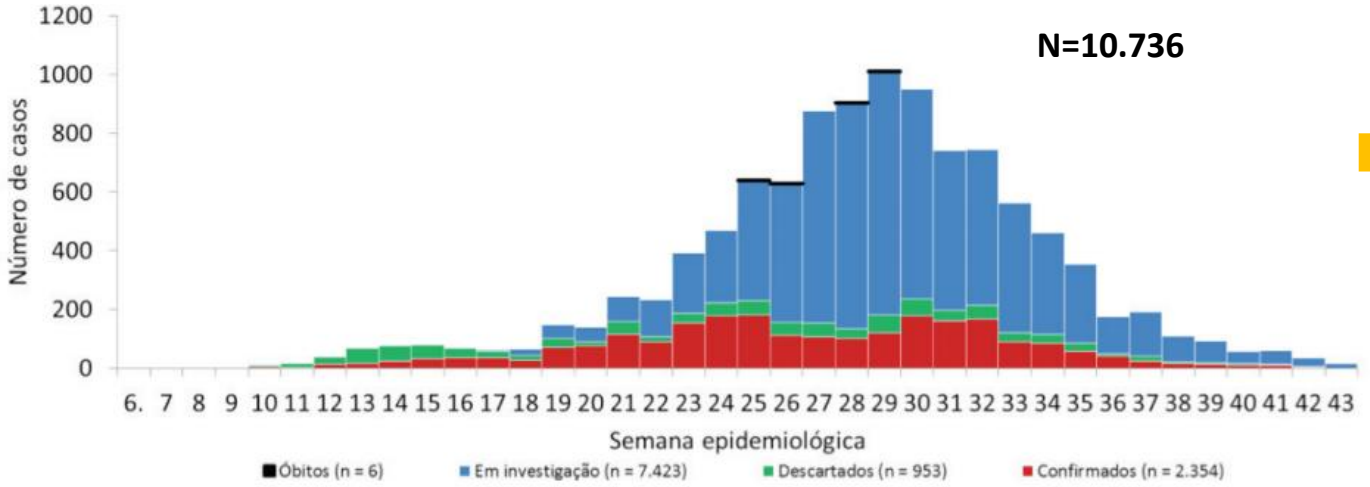
Faixa etária	Casos Confirmados	População	Incidência**
< 1 ano	80	10.097	792,3
1 a 4	92	39.487	233,0
5 a 9	55	51.427	106,9
10 a 14	36	54.094	66,6
15 a 19	23	48.980	47,0
20 a 29	35	90.504	38,7
30 a 39	16	69.591	23,0
40 a 49	7	48.826	14,3
> 50	1	30.816	3,2
Roraima	**345**	**443.822**	**77,7**

Fonte: Secretaria Estadual de Saúde do Roraima (SES/RR); Data 05/11/2018.
*Dados preliminares e sujeitos à alteração.
**Casos confirmados/população x 100 mil hab.

MS. Situação do Sarampo no Brasil. INFORME Nº 30. 05/11/2018

Sarampo – Amazonas, 2018

Distribuição dos casos notificados, confirmados e em investigação, por Semana Epidemiológica (SE) da data de início do exantema*



Fonte: Fundação de Vigilância em Saúde do Estado Amazonas (FVS/AM); Data 05/11/2018.
Dados preliminares sujeitos à alteração

Taxa de incidência por faixa etária, Amazonas, 2018.*

Faixa etária	Casos confirmados	População	Incidência**
< 1 ano	576	77.515	743,1
1 a 4	382	305.041	125,2
5 a 9	145	395.860	36,6
10 a 14	154	412.543	37,3
15 a 19	317	375.865	84,3
20 a 29	467	683.485	68,3
30 a 39	158	534.522	29,6
40 a 49	104	360.332	28,9
≥50	54	445.822	12,1
Amazonas	**2.357**	**3.590.985**	**65,6**

Fonte: Fundação de Vigilância em Saúde do Estado Amazonas (FVS/AM); Data 05/11/2018.
*Dados preliminares e sujeitos à alteração
**Casos confirmados/população x 100 mil hab.

MS. Situação do Sarampo no Brasil. INFORME Nº30. 05/11/2018

Sarampo – Brasil, 2018

Unidade Federada	Casos Confirmados*
Amazonas	2.357
Roraima	345
Rio Grande do Sul	43
Pará	23
Rio de Janeiro	19
Sergipe	4
Pernambuco	4
São Paulo	3
Rondônia	2
Distrito Federal	1
Brasil	**2.801**

Fonte: Secretaria Estadual de Saúde do AM, RR, RS, RJ, PA, SE, PE, SP, RO e DF.

Data: 05/11/2018;

*Dados sujeitos a alterações.

MS. Situação do Sarampo no Brasil. INFORME Nº 30. 05/11/2018

- Características comum aos três últimos surtos, em estados da região Nordeste (PB-2010, PE e CE - 2013-2015):
  - **Falta de oportunidade na detecção dos casos iniciais**
  - **Falta de oportunidade na execução das ações de controle**
- O atraso em ambas as ações permitiu a ampliação da circulação do vírus, tornando mais complexas as ações necessárias para interromper a transmissão
  - **Coberturas vacinais abaixo de 95%**, abaixo da meta do PNI (95% homogênea) e do necessário para impedir a circulação do sarampo
  - "**Bolsão" de suscetíveis entre adolescentes e adultos jovens** (15 – 30 anos)?

Saúde Brasil 2014. http://bvsms.saude.gov.br/bvs/publicacoes/saude_brasil_2014_analise_situacao.pdf

Coberturas vacinais D1 (SCR) e D2 (SCRV)

Tríplice viral (SCR)	2015	2016	2017
Brasil	96,07	95,41	84,97
AM	95,42	83,56	80,36
RR	108,45	90,77	87,30
SP	97,91	92,96	74,31
Tetra viral (SCRV)	**2014**	**2015**	**2016**
Brasil	90,19	77,37	79,04
AM	84,84	77,43	75,80
RR	89,83	92,53	83,64
SP	98,07	94,64	80,97

Fonte: Ministério da Saúde, em 18/08/2018
http://portalms.saude.gov.br/saude-de-a-z/sarampo-situacao-epidemiologica

UF	Cobertura Vacinal na Rotina (%)*	
	Dose 1 (D1)	Dose 2 (D2)
Rondônia	63,43	51,98
Amazonas	67,12	57,40
Roraima	57,70	52,21
Pará	48,65	32,21
Rio de Janeiro	65,09	43,65
São Paulo	48,28	40,52
Rio Grande do Sul	54,51	37,57
Pernambuco	69,25	45,00
Sergipe	66,5	48,31
Distrito Federal	55,73	53

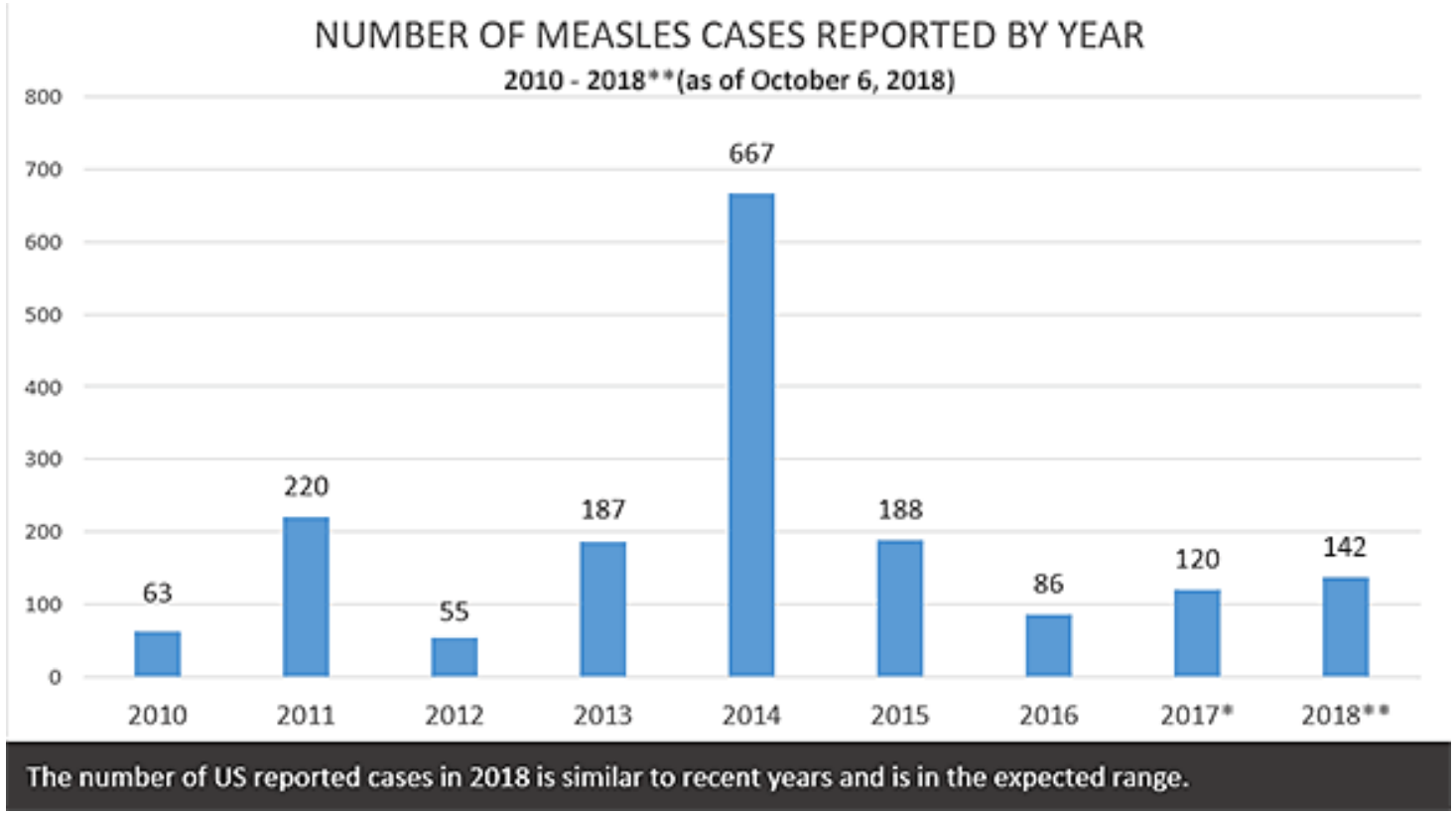
Fonte: *pni.datasus.gov.br
*sipni.datasus.gov.br
Dados finais, acessados em 22/10/2018.

Campanha de vacinação SCR, 6-31/08/2018
São Paulo, 2018: Cobertura vacinal: 95,3%,10,7 milhões de crianças < 5 anos vacinadas

Distribuição casos de sarampo, Set 2018

PAHO Epidemiological Update Measles 21 September 2018

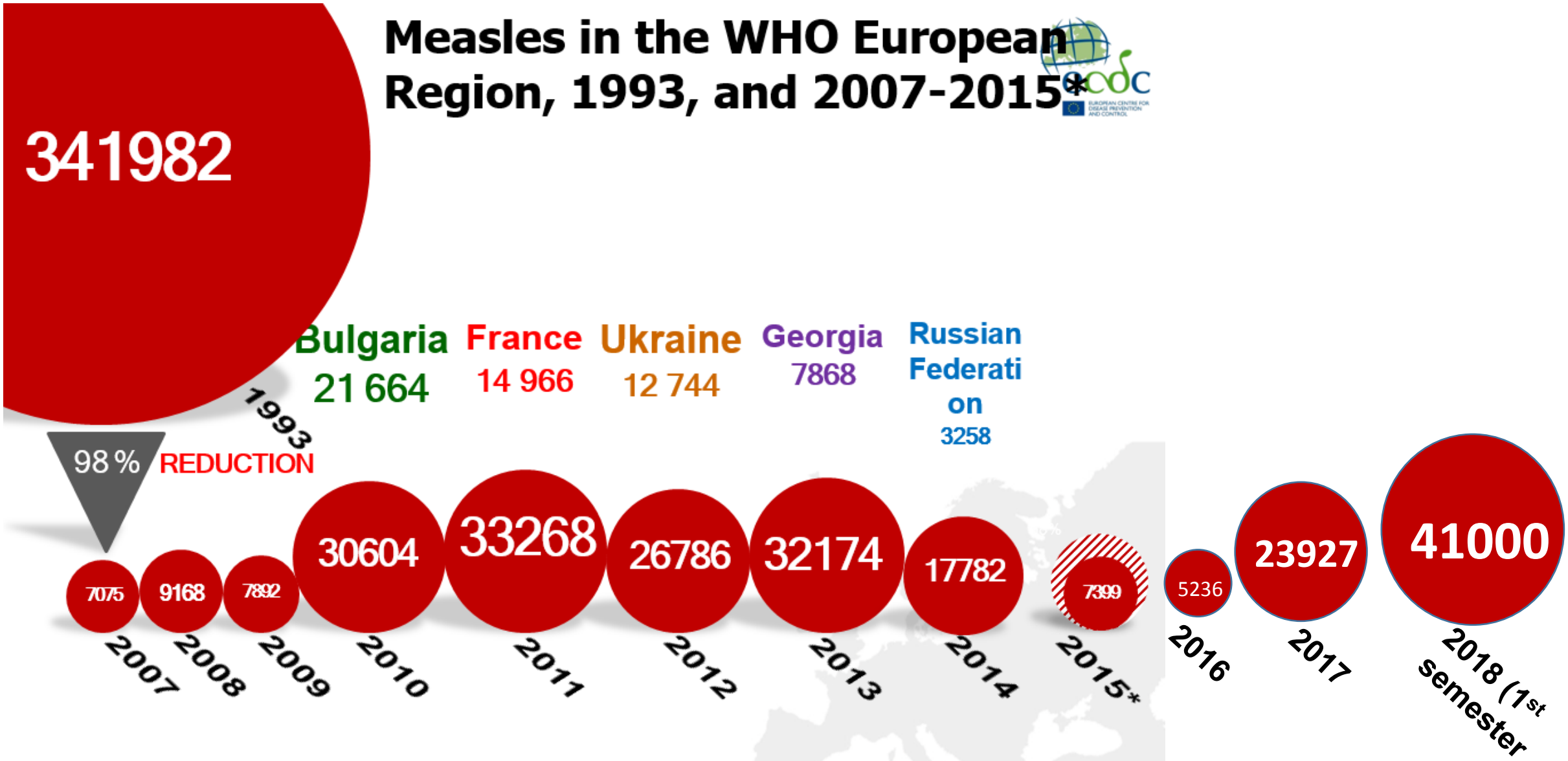
USA, 2010-2018



*Cases as of December 30, 2017. Case count is preliminary and subject to change.
Cases as of October 6, 2018. Case count is preliminary and subject to change. **Data are updated monthly.
Source: Morbidity and Mortality Weekly Report (MMWR), Notifiable Diseases and Mortality Tables

https://www.cdc.gov/measles/cases-outbreaks.html

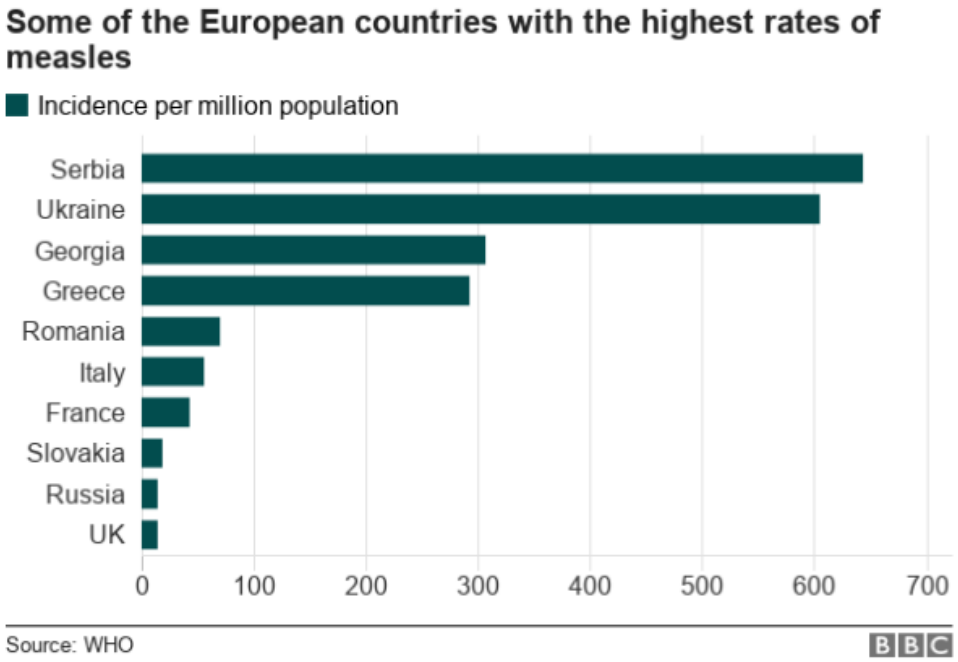
Measles in the WHO European Region, 1993, and 2007-2015*

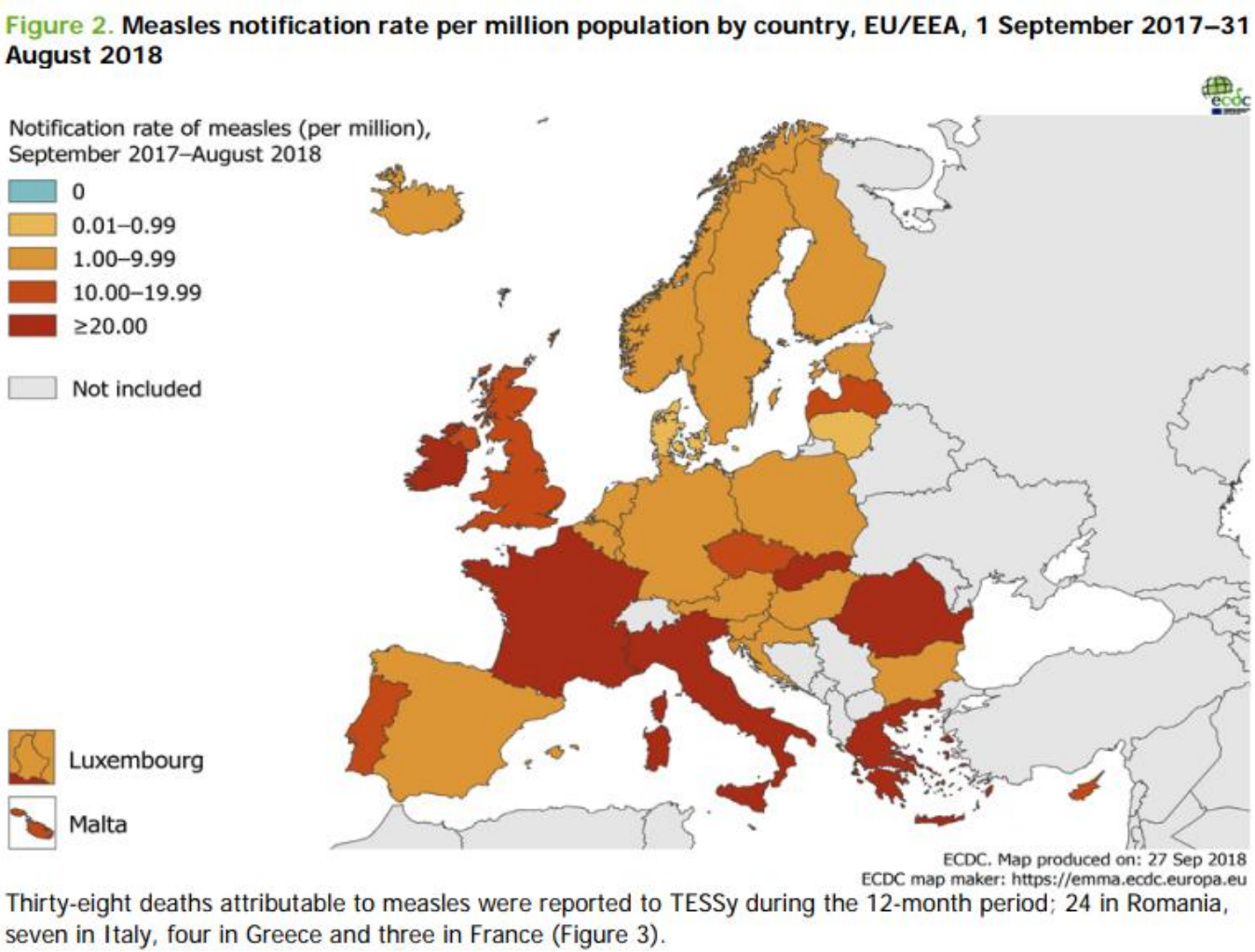


*Data extracted 04 March 2016

Source: WHO

- Europa, 1º semestre 2018:
  41 mil casos de sarampo
  37 mortes



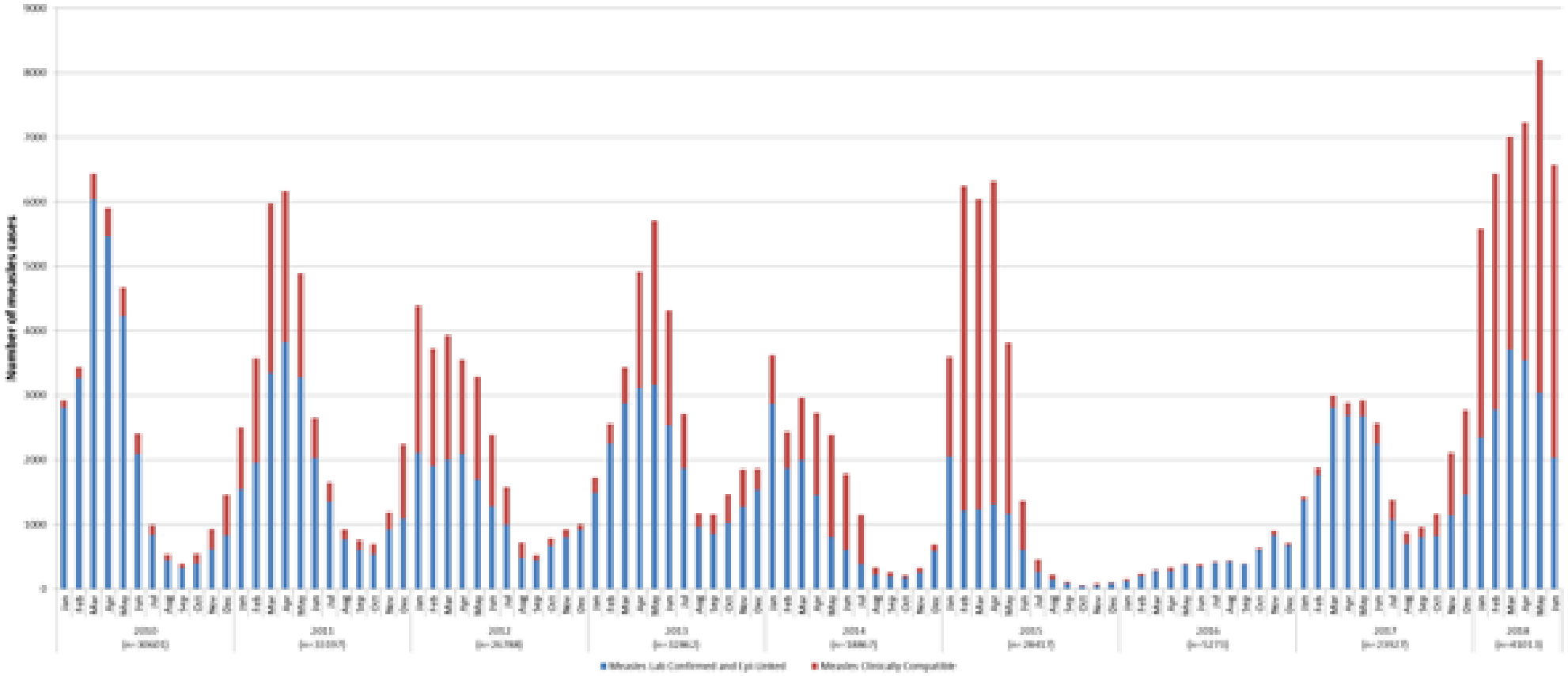


Thirty-eight deaths attributable to measles were reported to TESSy during the 12-month period; 24 in Romania, seven in Italy, four in Greece and three in France (Figure 3).

ECDC. Monthly measles and rubella monitoring report, October 2018. *BMJ* 2018;362:k3596

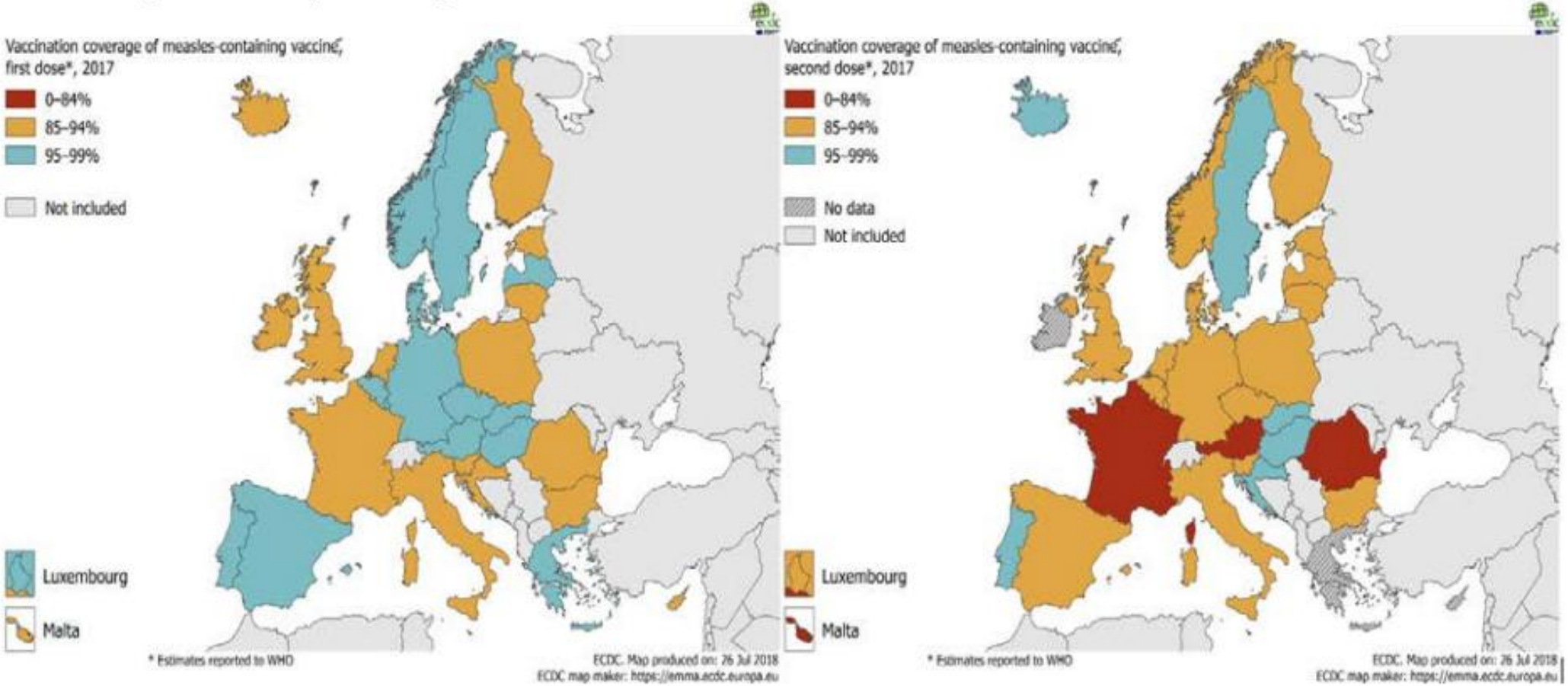
Distribution of measles cases by month and year of rash onset in the European Region, Jan-2010 to Jun-2018* (as of 01 August 2018) *

Data source: Monthly aggregated and case-based data reported by Member States to WHO/Europe or via ECDC/TESSy



http://www.euro.who.int/en/media-centre/sections/press-releases/2018/measles-cases-hit-record-high-in-the-european-region

Figure 4. Vaccination coverage for the first (left panel) and second (right panel) doses of measles-containing vaccine by country, EU/EEA, 2017



ECDC. Monthly measles and rubella monitoring report, October 2018. *BMJ* 2018;362:k3596

“Europe is in the midst of a huge outbreak of measles, with scepticism about vaccination coming from social media, senior politicians, and even doctors.” Talha Burki [Lancet Oct 2018]

- Sobreposição países com alto nível desconfiança/hesitação em relação a vacinas e locais que enfrentam problemas com o sarampo
- Inquérito, França, 2016:
  - 41% discordaram da afirmação “em geral, acho que vacinas são seguras”
- Inquérito com médicos, França, 2015:
  - ~50% hesitante em relação a pelo menos 1 vacina
  - 20% GPs acreditavam que as crianças recebem muitas vacinas
- Marine Le Pen, se opõe publicamente à vacinação obrigatória
- Itália, Primeiro-ministro adjunto: “Dez vacinas obrigatórias são inúteis e em muitos casos, perigosas”
- Mídias sociais exacerbam dúvidas: 50% tweets sobre vacina têm conteúdo anti-vacina

Burki. Lancet. Oct 2018 / Broniatowski. AJPH October 2018, Vol 108, No. 10

E no Brasil, qual o motivo da queda das coberturas?

- Dificuldade de acesso (serviços funcionam segunda a sexta, 8-17h)
- Eventuais faltas de produtos nas salas de vacinação, que desestimulam retornos posteriores
- Vínculo das pessoas/ família com o serviço de saúde → Papel do PS – checagem carteira de vacinação, orientação e incentivo à vacinação
- Percepção enganosa de que as doenças desapareceram e de que não é mais necessário vacinar
- Medo de eventos adversos
- Desconhecimento sobre quais as vacinas disponíveis no PNI e quando devem ser administradas
- Mudança na forma de aferição (implantação SI-PNI - ~70% das salas)
- Fake News / movimento anti-vacinação

- Confiança da população nos benefícios da vacinação como meio eficaz e seguro de prevenção de doenças
- As pessoas estão perguntando mais sobre as vacinas. Todos os questionamentos sobre vacinas precisam ser adequadamente respondidos [Holt. Lancet. Sept 1, 2018]

ana.sartori@hc.fm.usp.br