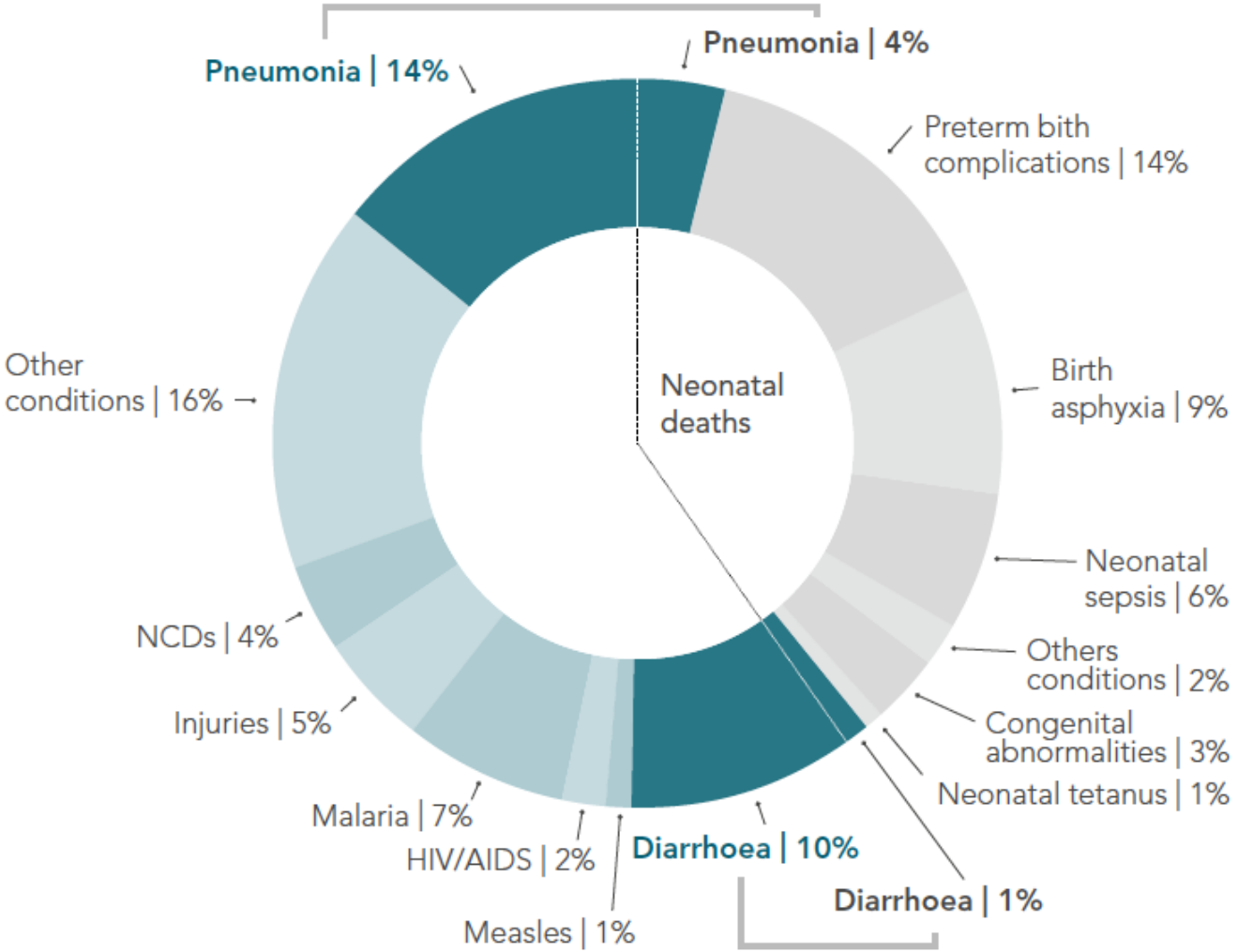
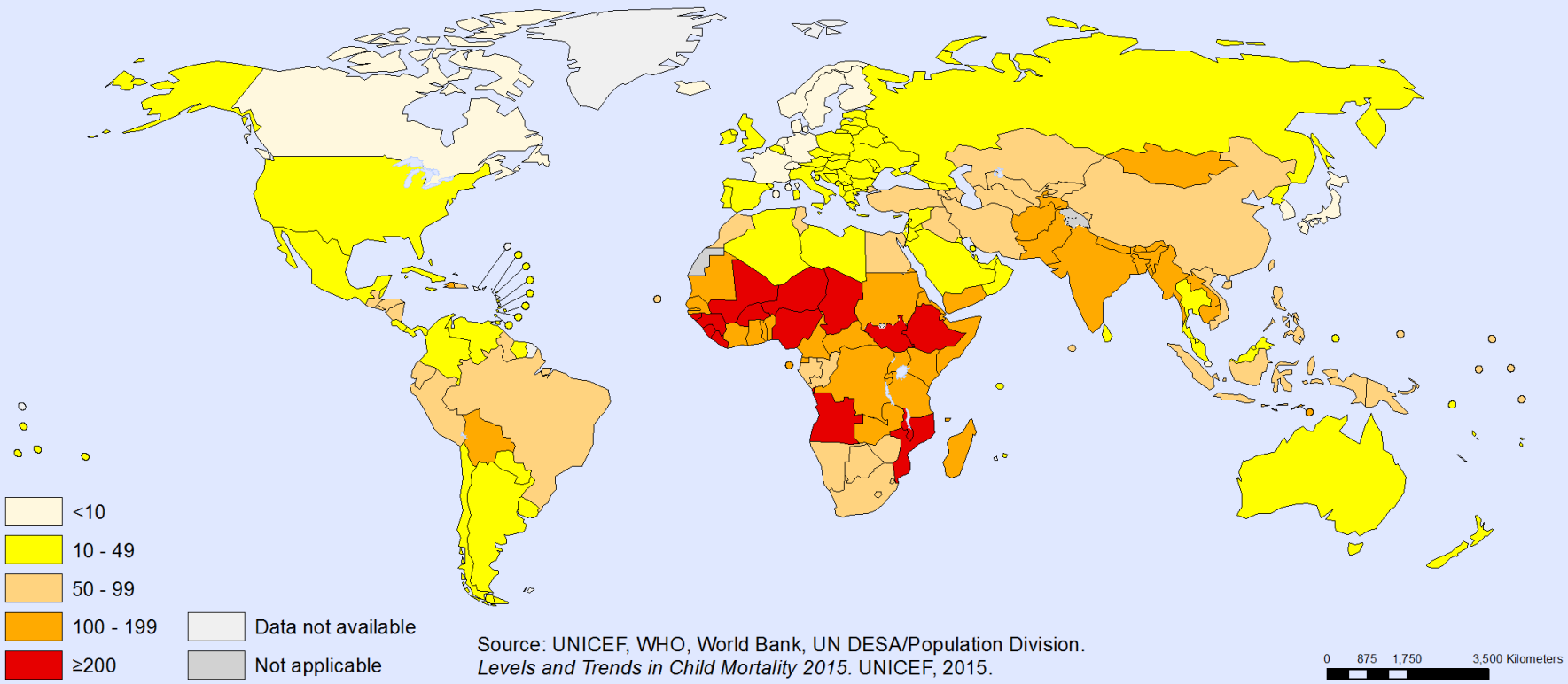
Viral Gastroenteritler ve Korunma Yolları

Prof. Dr. Mustafa Bakır
Marmara Üniversitesi

Global <5y Mortalite



Under-five mortality rate (probability of dying by age 5 per 1000 live births), 1990



The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: World Health Organization
Map Production: Health Statistics and Information Systems (HSI)
World Health Organization

World Health Organization

ROTAVİRÜS <5Y MORTALİTESİ: GLOBAL

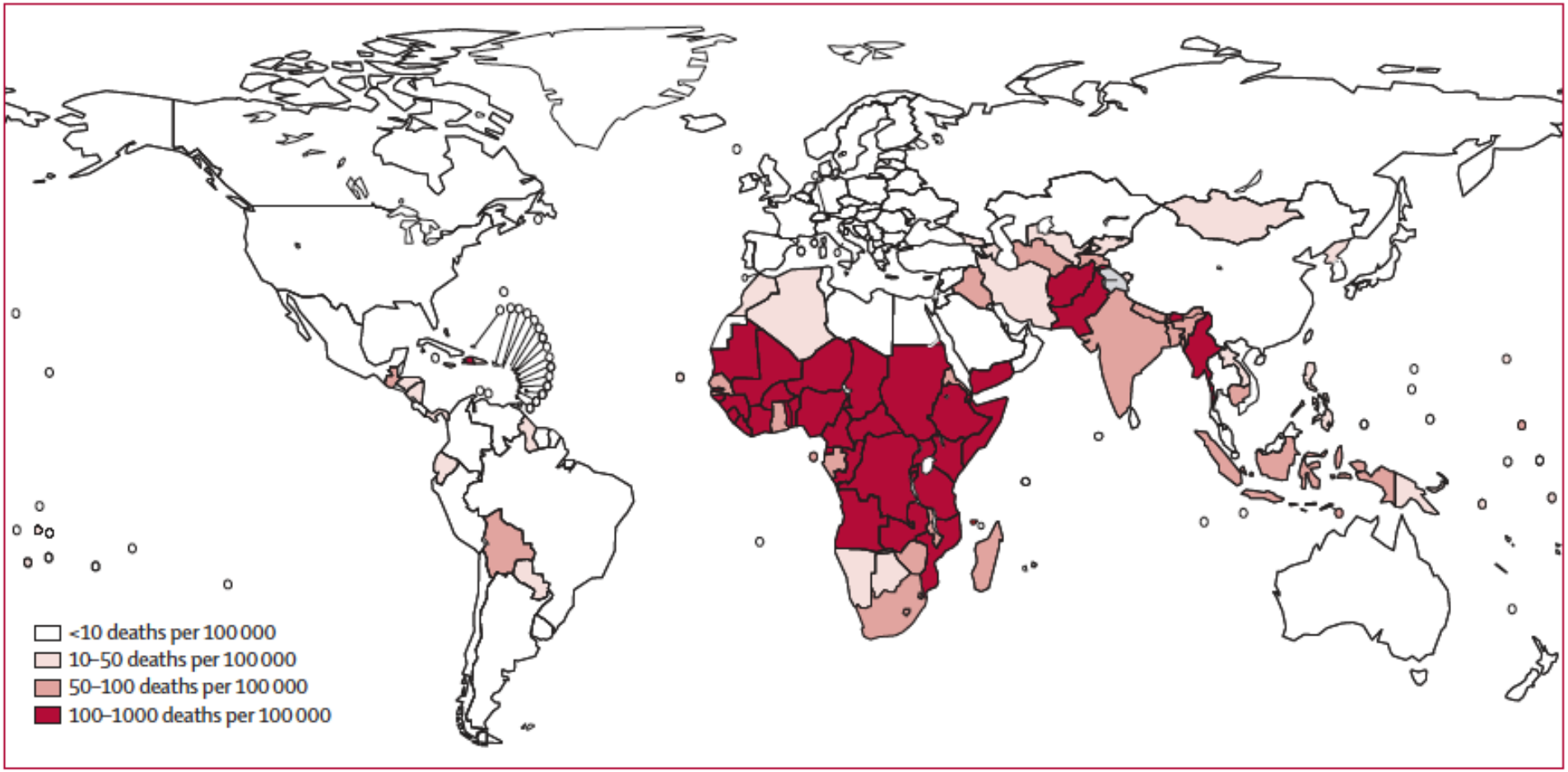
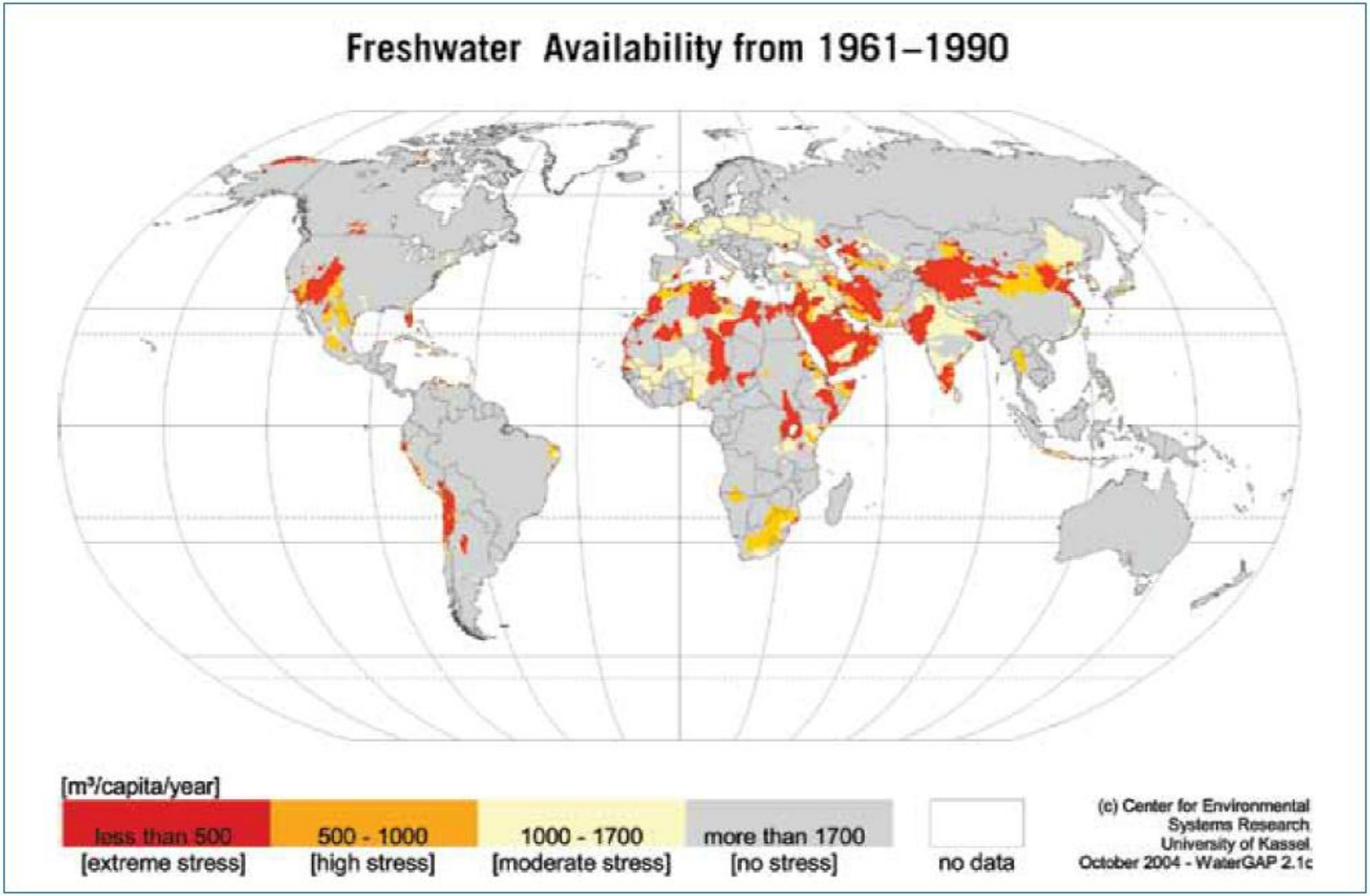


***Figure 4*: Rotavirus mortality in children younger than 5 years**

Tate JE et al. Lancet 2011



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Epidemiologic and clinical features of common causes of acute viral gastroenteritis in children

Virus	Predominant season	Incubation period	Common modes of transmission in order of frequency	Age	Duration	Lactose intolerance	Other features
Rotavirus	Fall/winter	1 to 3 days	▪ Fecal-oral ▪ Respiratory?	6 to 24 months	5 to 7 days	Yes	▪ Causes severe childhood diarrhea ▪ Endemic; season broadened by mass immunization
Norovirus	All year (winter)	12 to 48 hours	▪ Fecal-oral ▪ Water ▪ Shellfish ▪ Other foods ▪ Respiratory?	All ages	1 to 4 days	No	▪ Vomiting is prominent symptom ▪ Causes most outbreaks of nonbacterial gastroenteritis ▪ Endemic and epidemic
Sapovirus	All year	1 to 2 days	▪ Fecal-oral	Infants and toddlers	3 to 4 days		▪ Endemic and epidemic
Astrovirus	Winter	4 to 5 days	▪ Fecal-oral ▪ Water	All ages	5 to 6 days	Yes	▪ Endemic and epidemic
Enteric adenovirus (types 40 and 41)	Summer	3 to 10 days	▪ Fecal-oral	Children	6 to 9 days	Yes	▪ Endemic

Data from:

1. *Dennehy PH. Viral gastroenteritis in children. Pediatr Infect Dis J 2011; 30:63.*
2. *Lee RM, Lessler J, Lee RA, et al. Incubation periods of viral gastroenteritis: A systematic review. BMC Infect Dis 2013; 13:446.*
3. *Public Health Agency of Canada. Adenovirus (serotypes 40 & 41). Available at: www.phac-aspc.gc.ca/lab-bio/res/psds-ftss/adenovirus-eng.php (Accessed on August 5, 2015).*

GELİŞMEKTE LAN ÜLKELERDE VİRAL GASTROENTERİT ETKENLERİ

Table 1 Viral gastroenteritis in children in developing countries

Country	Rotavirus (%)	Calicivirus (%)	Adenovirus (%)	Astrovirus (%)
China	54	10.3	3.3	4.4
China	40.6	11.1	7.6	3.5
China	50.1	7.6	2.1	3.6
India	36.9	15.8	6.4	1.9
Taiwan	26.4	10.2	15.2	2.9
Thailand	11.3	13.2	3.8	0
Vietnam	53.2	7.6	2.4	13.9
Brazil	NT	7.6	3.6	3.1
Egypt	46.2	15.2	6.9	2.5
Ghana	38.7	7.4	19.9	3.3
Madagascar	38	5.9	NT	2.1
Tunisia	22.5	18.4	2.7	4.1
Saudi Arabia	6	3.5	1.4	1.9
Mean prevalence rate	34.9	10.3	6.3	3.5

Ramani S, Kang G. Curr Opin Infect Dis 2009

ROTAVİRÜS HASTALIĞI: GLOBAL

	Number of studies	Number of specimens	Mean detection rate (95% CI)	Number of diarrhoea-related deaths	Number of deaths attributable to rotavirus infection
A	8	7591	49% (34–64)	<1000	<1000
B and C	77	96 349	40% (36–44)	67 000	27 000
D (Asia)	15	13 732	42% (35–48)	452 000	188 000
D (Americas)	3	7567	42% (37–47)	13 000	5000
D and E (Africa)	28	25 933	33% (28–38)	704 000	232 000
Total	131	151 172	..	1 236 000	453 000

For greater detail see the webappendix.

Table 2: **Rotavirus detection rate and deaths due to diarrhoea and rotavirus by WHO child mortality group and region**

Tate JE et al. Lancet 2011

ROTAVİRÜS HASTALIĞI: GLOBAL

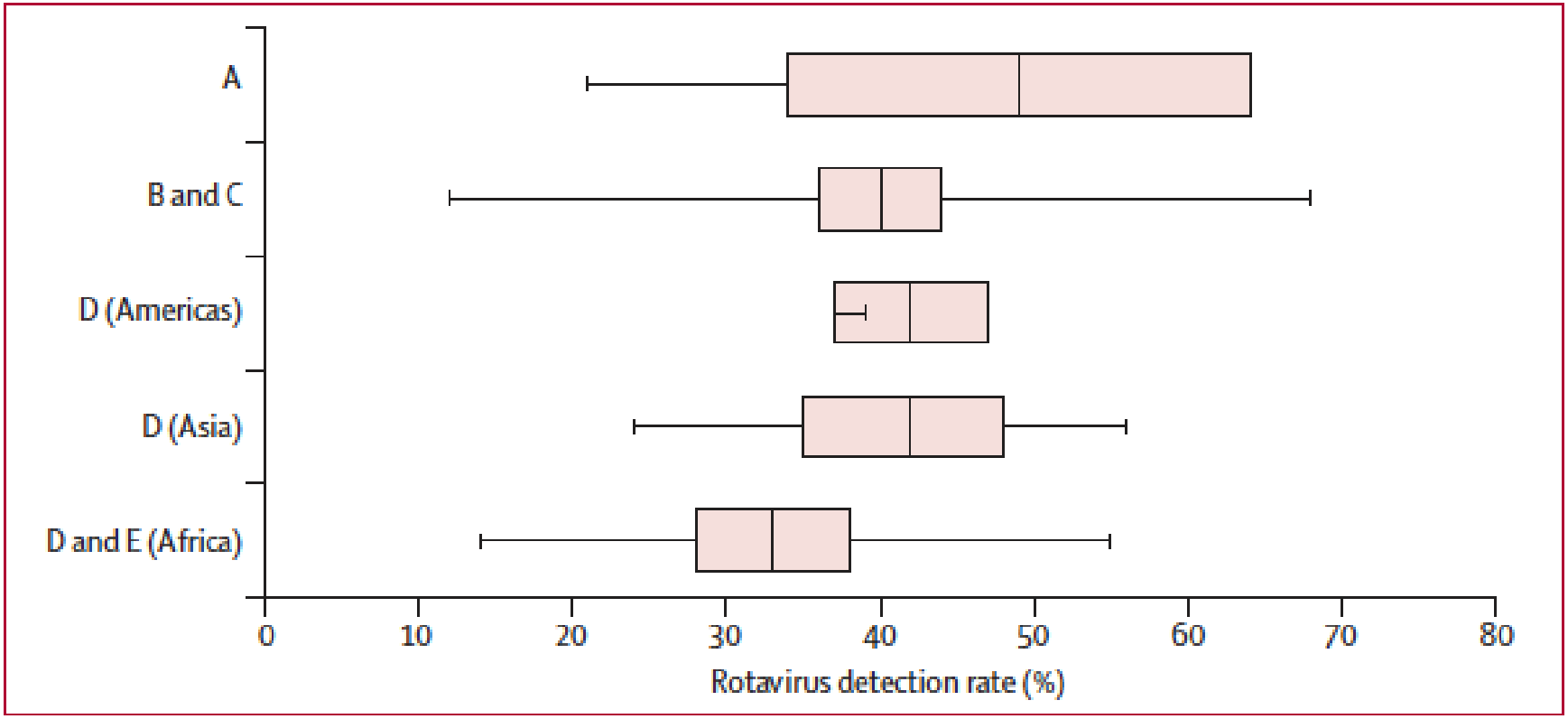
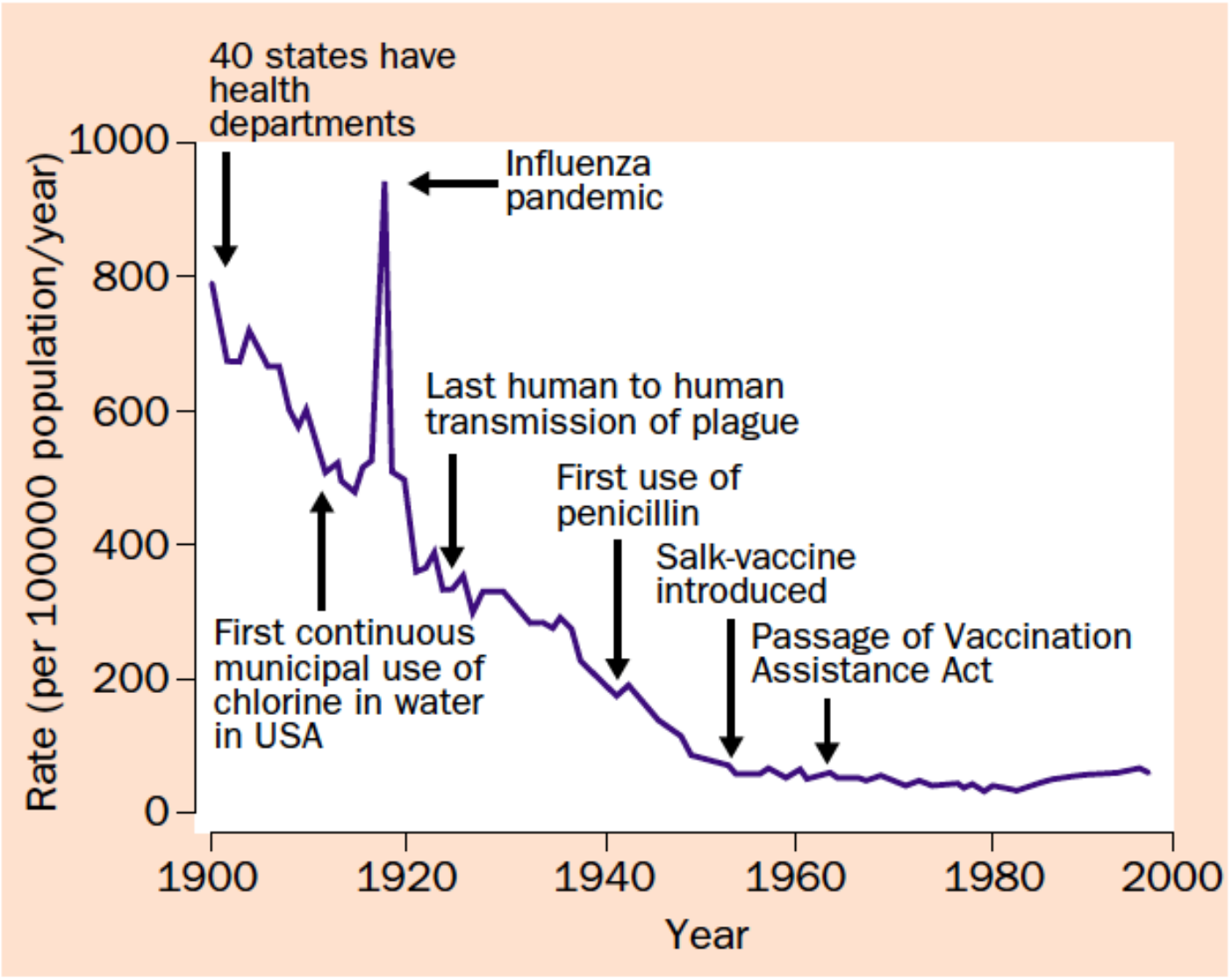


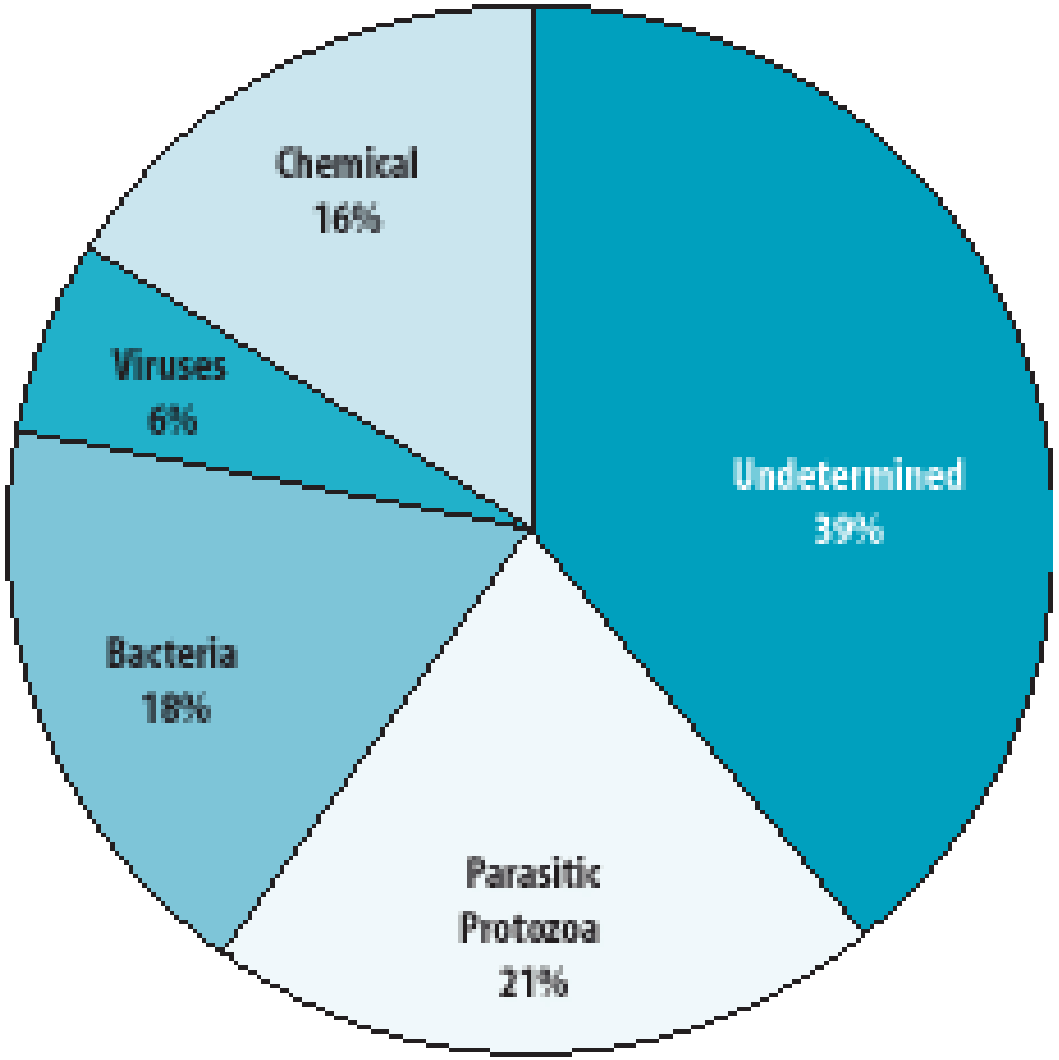
***Figure 2*: Rotavirus detection rates by WHO child mortality group and region**

Tate JE et al. Lancet 2011



Crude death rate for infectious diseases, USA, 1900–1996. Adapted from: Achievement in public health, 1900–1999: control of infectious diseases. MMWR Morb Mortal Wkly Rep *1999; 48: 621–29; and Armstrong GL, Conn LA, Pinner RW. Trends in infectious disease mortality in the United States during the 20th century.* JAMA *1999; 281: 61–66.*

Causes of Waterborn Disease Outbreaks in the USA, 1991–2000



Water sanitation and health
Drinking-water quality
Bathing waters
Water resources
Water supply and sanitation monitoring
Water supply, sanitation and hygiene
Water-related diseases
Wastewater use
Healthcare waste
Emerging issues
Water, health and economics
Household water treatment
Publications

Water-related diseases: information sheets

Share Print

WHO fact sheets

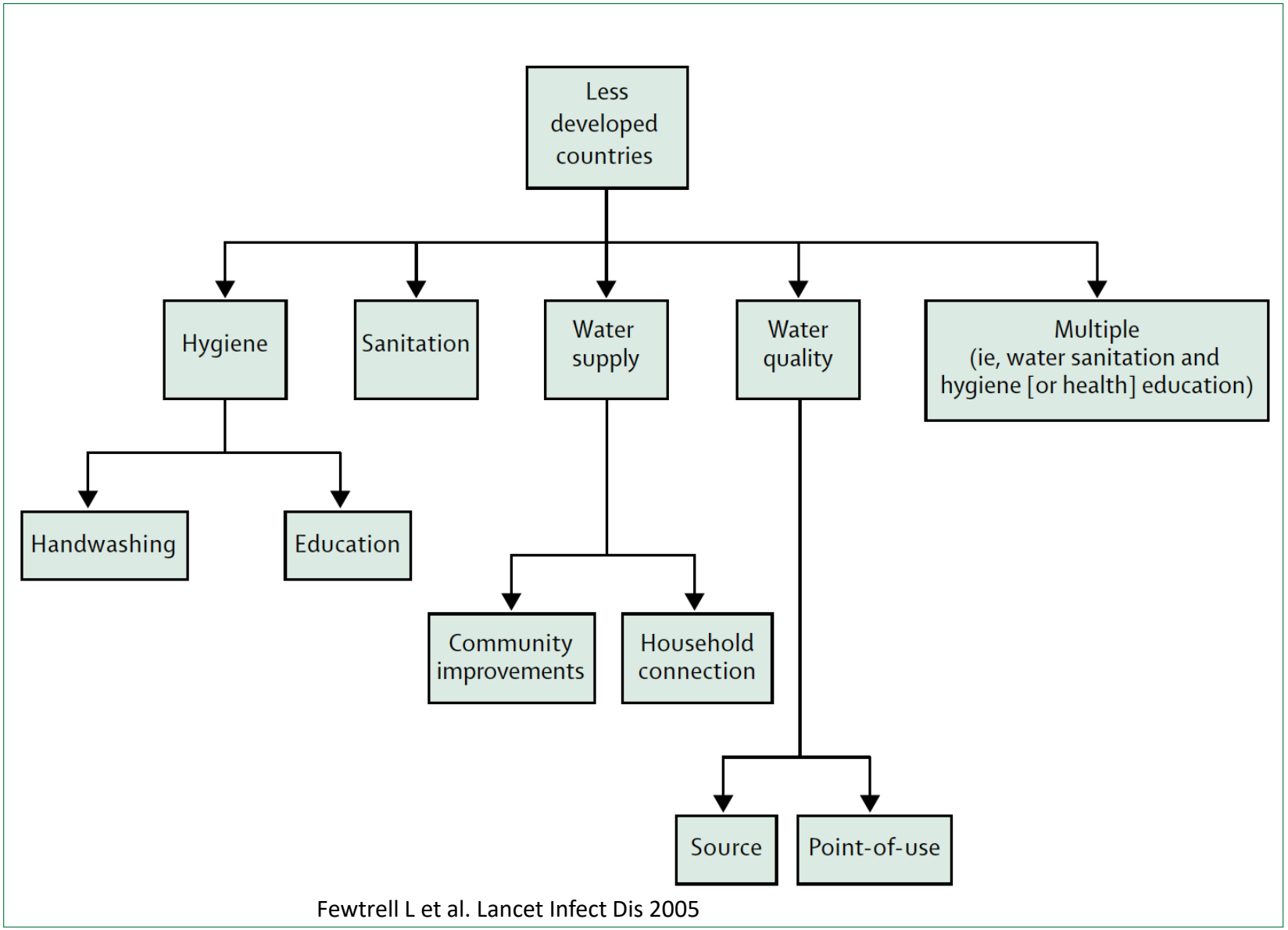
Arsenic in drinking-water

Dracunculiasis (guinea-worm disease)

Information sheets

- Anaemia
- Arsenicosis See also: Arsenic in drinking-water
- Ascariasis
- Campylobacteriosis. See other WHO related activities
- Cholera. See also other WHO related activities
- Cyanobacterial Toxins
- Dengue and Dengue Haemorrhagic Fever. See other WHO related activities
- Diarrhoea . See other WHO related activities
- Drowning
- Fluorosis
- Hepatitis. See other WHO related activities
- Japanese Encephalitis. See other WHO related activities
- Lead Poisoning. See also lead in drinking-water
- Leptospirosis
- Malaria . See also: WHO Activities on Malaria
- Malnutrition . See also Global Database on Child Growth and Malnutrition
- Methaemoglobinemia
- Onchocerciasis (River Blindness). See other WHO related activities
- Ringworm (Tinea)
- Scabies
- Schistosomiasis. See other WHO related activities
- Spinal Injury
- Trachoma. See other WHO related activities
- Typhoid and Paratyphoid Enteric Fevers. See WHO related activities

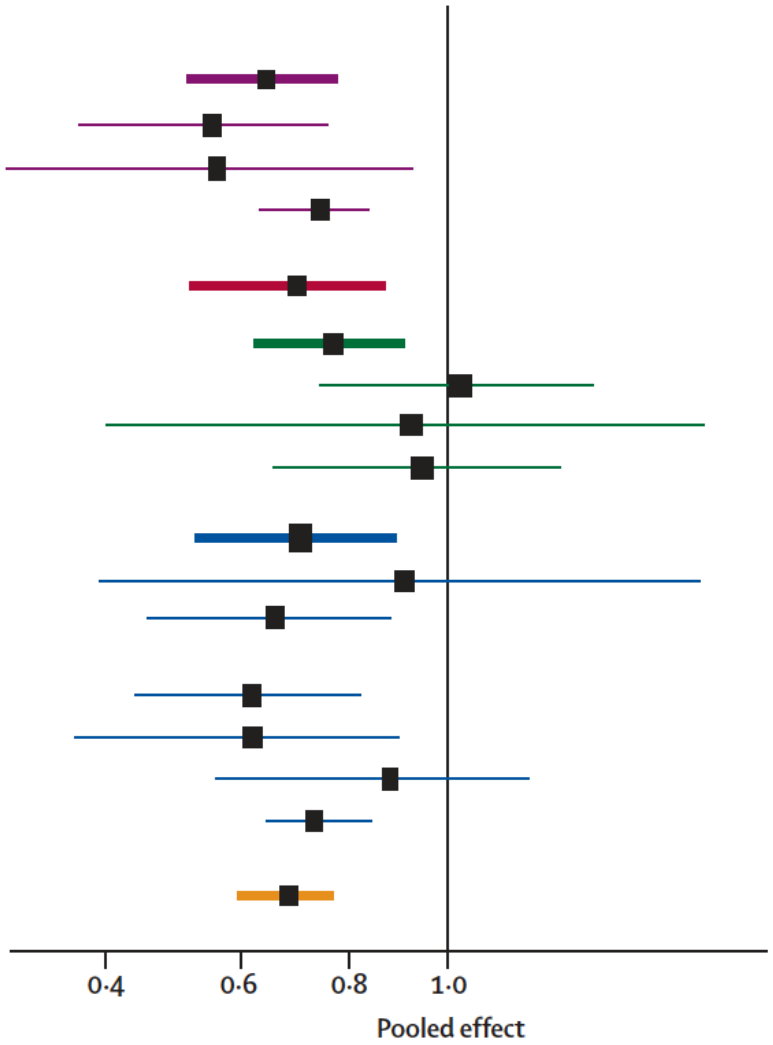
SU, HİJYEN VE SANİTASYON:AKUT İSHAL ÜZERİNE ETKİSİ



Fewtrell L et al. Lancet Infect Dis 2005

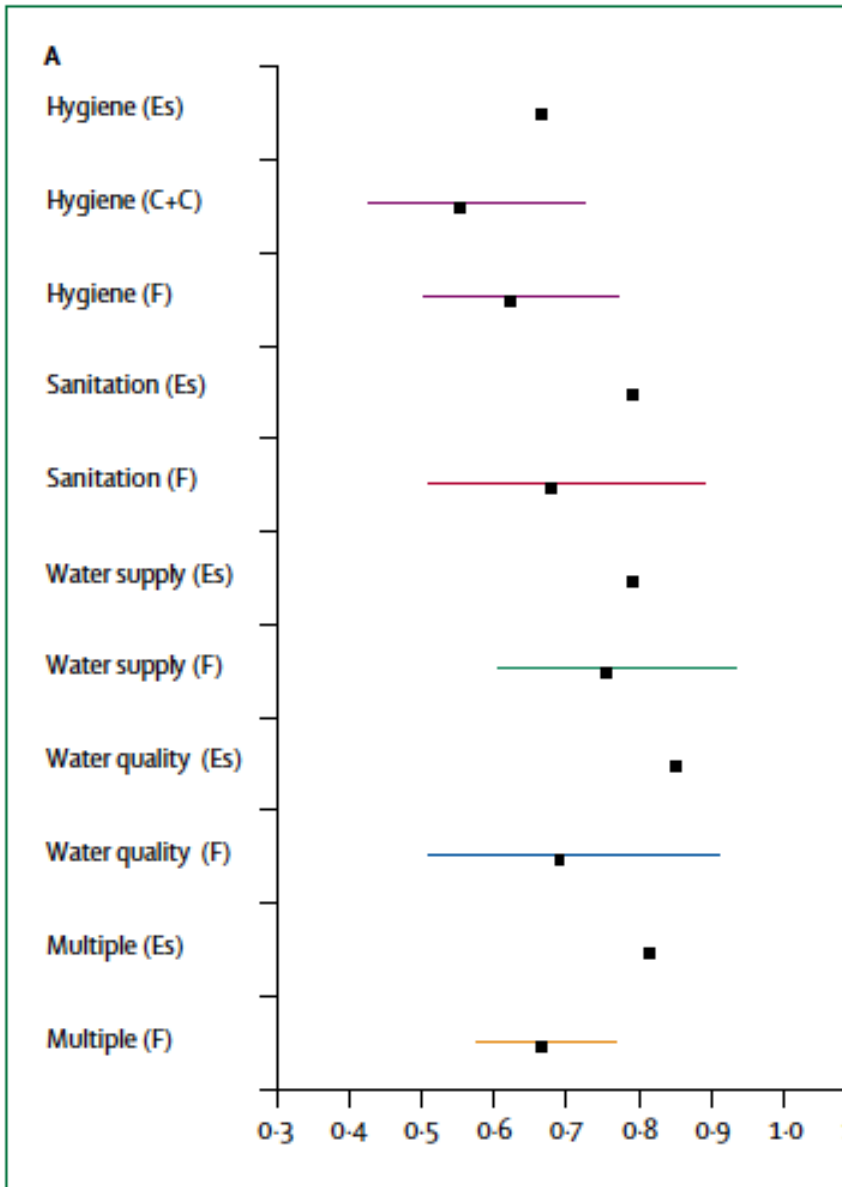
SU, HİJYEN VE SANİTASYON:AKUT İSHAL ÜZERİNE ETKİSİ

	Number of studies	Relative risk (95% CI)
Hygiene	11	0·63 (0·52–0·77)
Excluding poor quality studies	8	0·55 (0·40–0·75)
Handwashing	5	0·56 (0·33–0·93)
Education	6	0·72 (0·63–0·83)
Sanitation	2	0·68 (0·53–0·87)
Water supply	6	0·75 (0·62–0·91)
Diarrhoea only	4	1·03 (0·73–1·46)
Household connection	2	0·90 (0·43–1·93)
Standpipe or community connection	3	0·94 (0·65–1·35)
Water quality	15	0·69 (0·53–0·89)
Source treatment only	3	0·89 (0·42–1·90)
Household treatment only	12	0·65 (0·48–0·88)
Household treatment		
• excluding poor quality studies	8	0·61 (0·46–0·81)
• rural location	6	0·61 (0·39–0·94)
• urban/periurban locations	5	0·86 (0·57–1·28)
• urban/periurban excluding Sathe[35]	4	0·74 (0·65–0·85)
Multiple	5	0·67 (0·59–0·76)

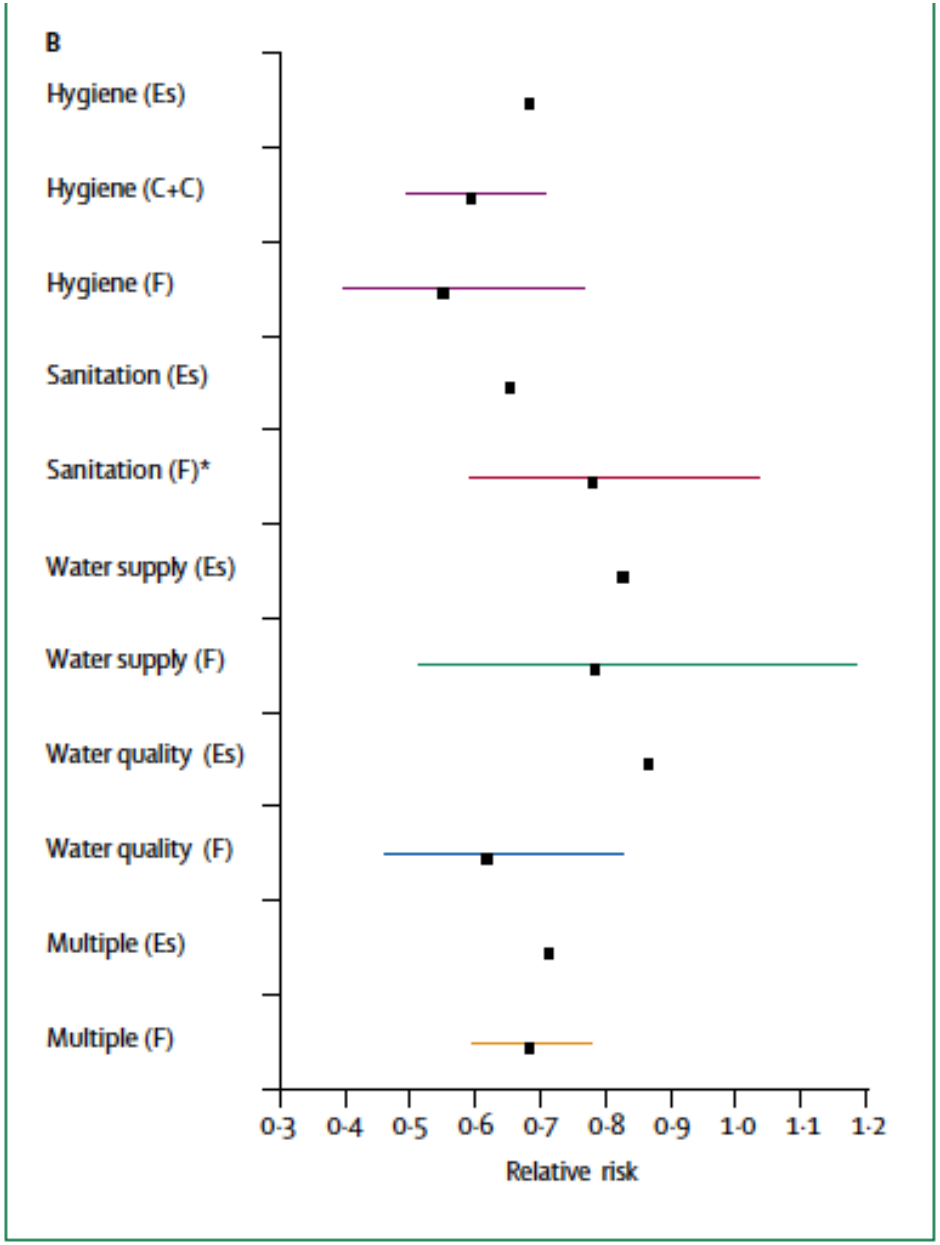


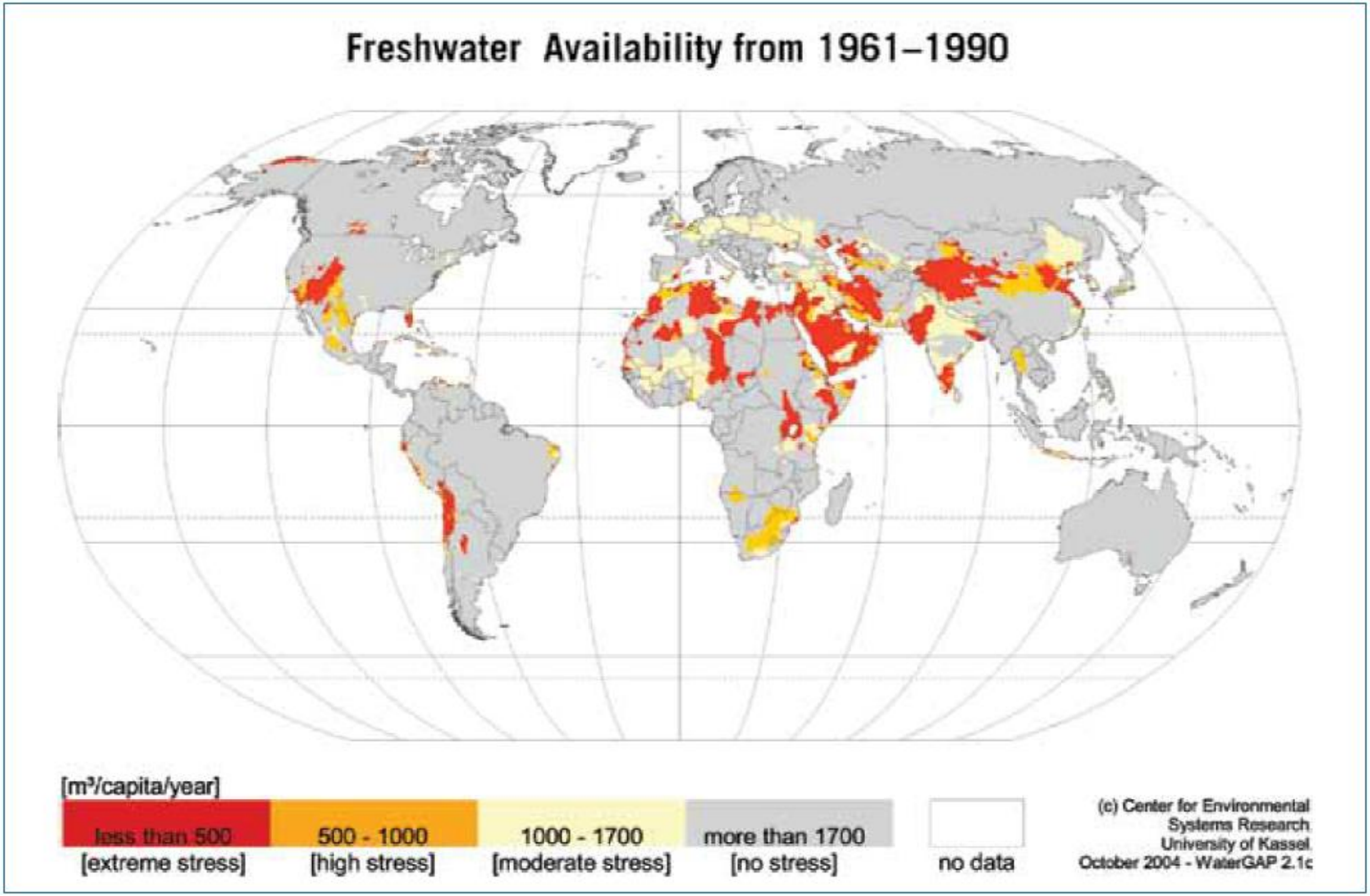
Fewtrell L et al. Lancet Infect Dis 2005

Tüm Çalışmaları İçeren Meta-analizler



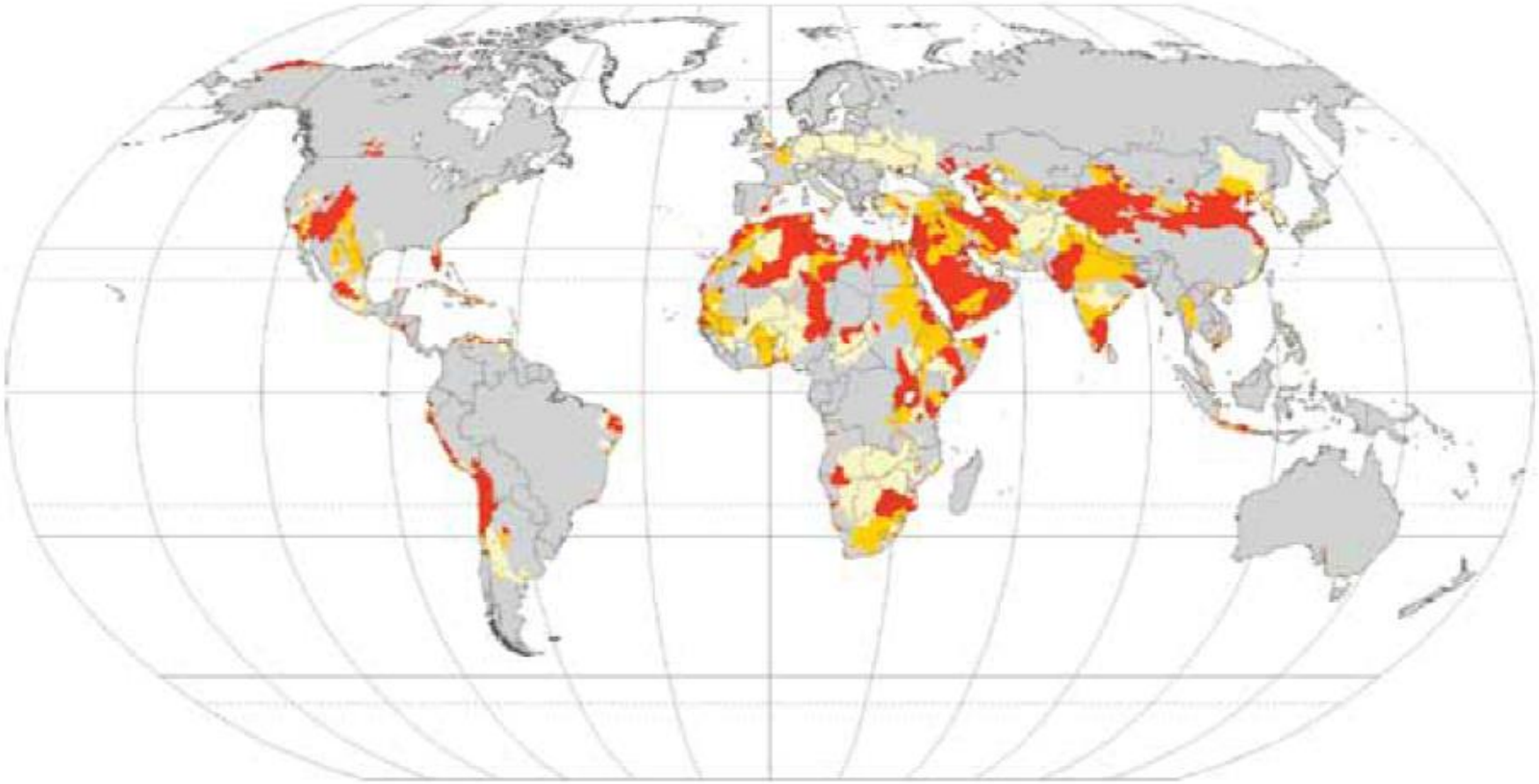
En Kaliteli Çalışmaları İçeren Meta-analizler





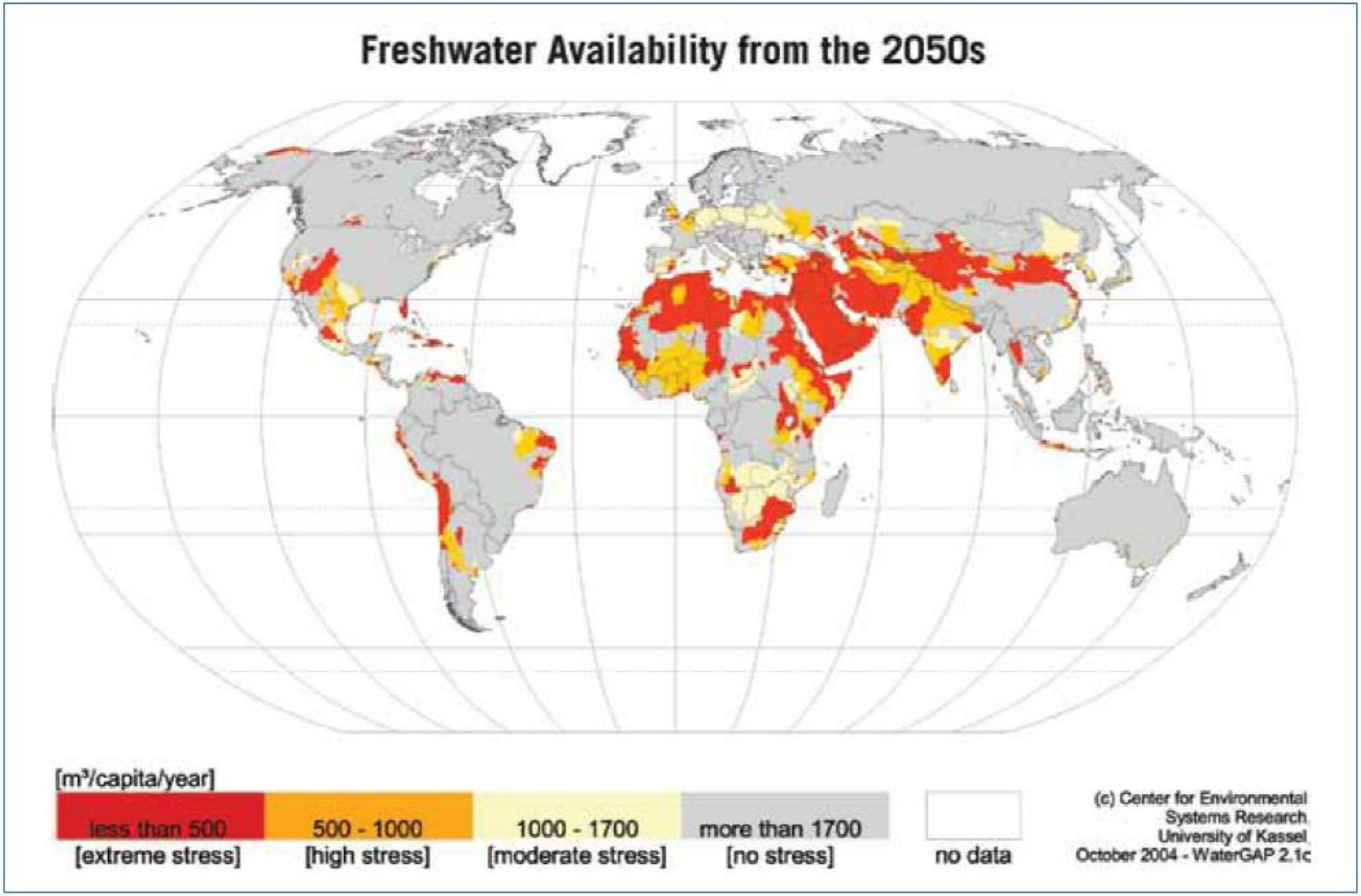
This map and the maps on pages 17 are reproduced by courtesy of Prof. Martina Flörke of the Center for Environmental Systems Research, University of Kassel, Germany. Source: Joseph Alcamo, Martina Flörke, and Michael Märker, "Future long-term changes in global water resources driven by socio-economic and climate changes," *Hydrological Sciences Journal* 52, no. 2 (2007), 247-275.

Freshwater Availability from the 2020s



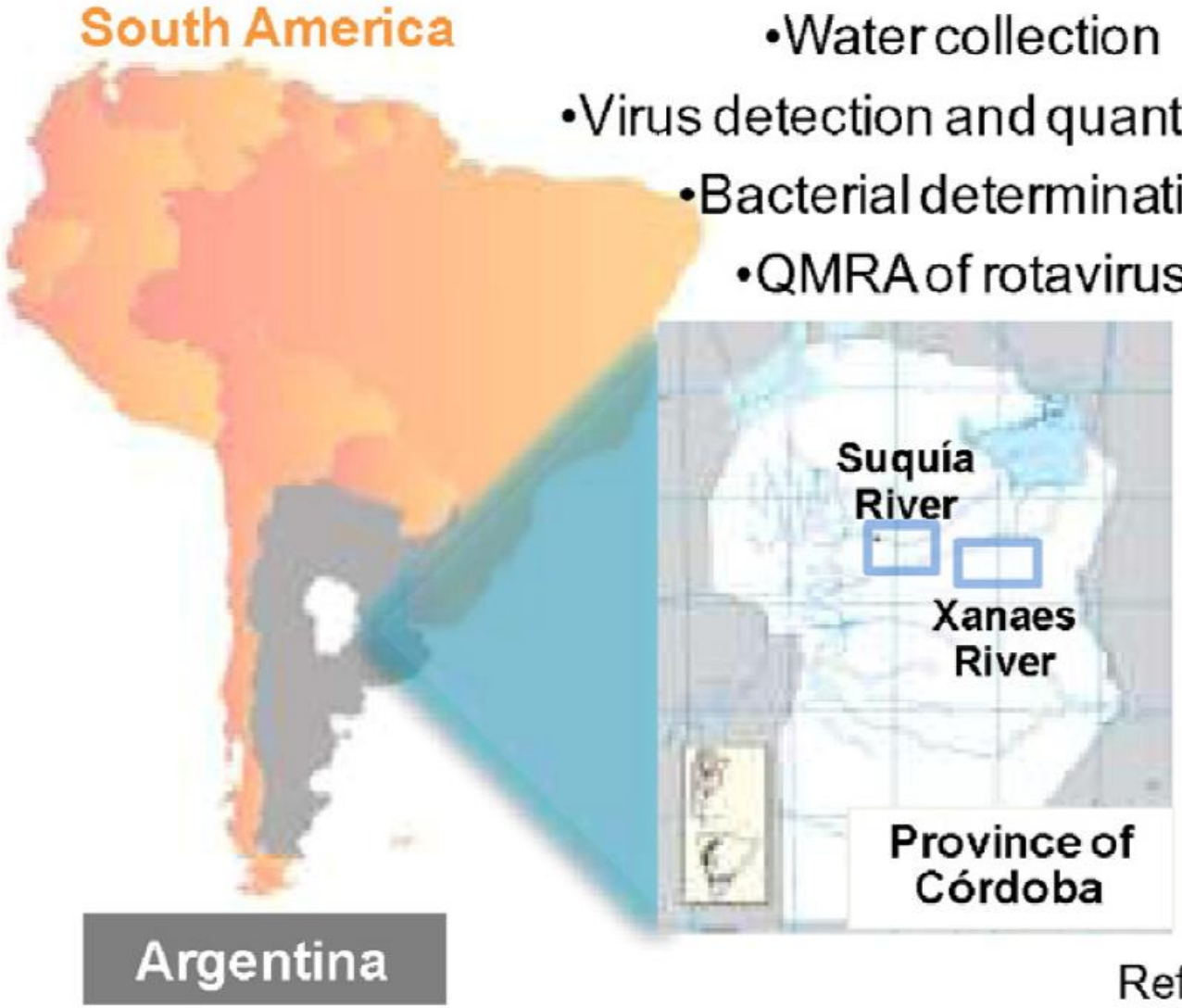
[m³/capita/year]

less than 500	500 - 1000	1000 - 1700	more than 1700	
[extreme stress]	[high stress]	[moderate stress]	[no stress]	no data



These two maps show the future projections of water availability per capita for the 2020s and 2050s. The socio-economic and climate drivers on which the maps are based come from the IPCC SRES scenario A2. See http://gcmd.nasa.gov/records/GCMD_CIESIN_SEDAC_IPCC_SRES_EMSC_V11.html. Climate change input was taken from the Hadley Centre, UK (HadCM3). Maps created by the Center for Environmental Systems Research, University of Kassel, Germany. Source: Joseph Alcamo, Martina Flörke, and Michael Märker, "Future long-term changes in global water resources driven by socio-economic and climate changes," *Hydrological Sciences Journal* 52, no. 2 (2007), 247-275.

Fekal Kontaminasyon vs Rotavirus



- Water collection
- Virus detection and quantification
- Bacterial determination
- QMRA of rotavirus

References:

Prez VE et al. Science of the Total Environment 538 (2015) 220–229

Fekal Kontaminasyon vs Rotavirus

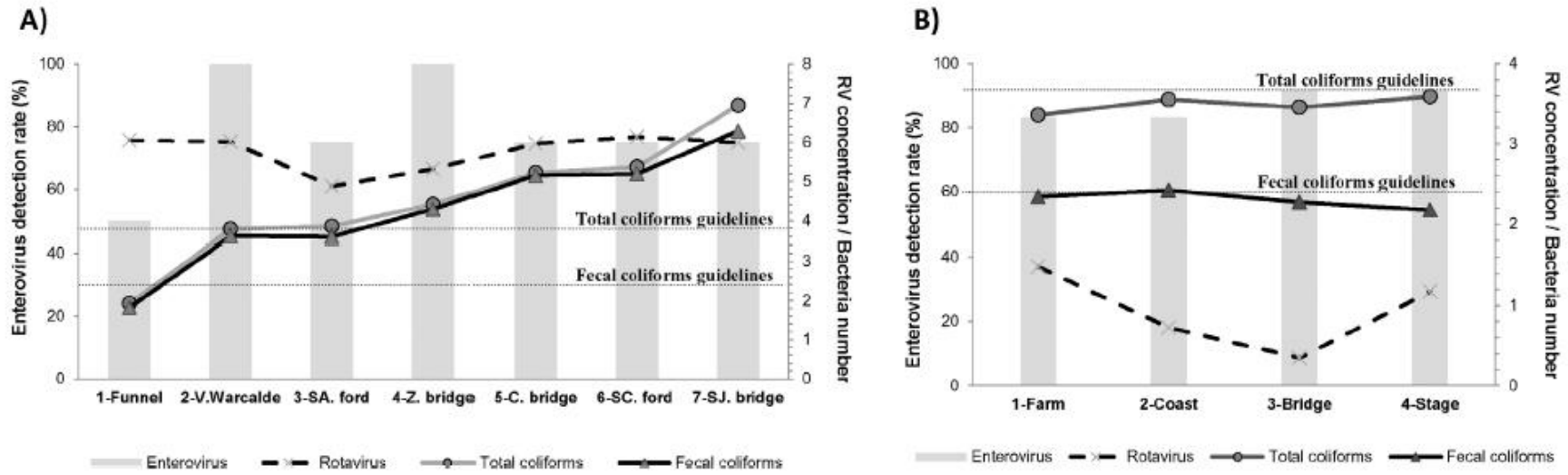


Fig. 2. Enteric viruses (viable EV and RV genome) and indicator bacteria (fecal and total coliforms) at each sampling site of the (A) Suquía River and (B) Xanaes River. Bacteria loads are depicted as $\log_{10}$ MPN/100 mL and rotavirus concentration as $\log_{10}$ gc/L. Bacteria guidelines are: fecal coliforms ≤200 MPN/100 mL (≤$\log_{10}$ 2.3) and total coliforms ≤5000 MPN/100 mL (≤$\log_{10}$ 3.7).

Prez VE et al. Science of the Total Environment 538 (2015) 220–229

GLOBAL ÇEVRESEL ROTAVİRÜS EMİSYONU

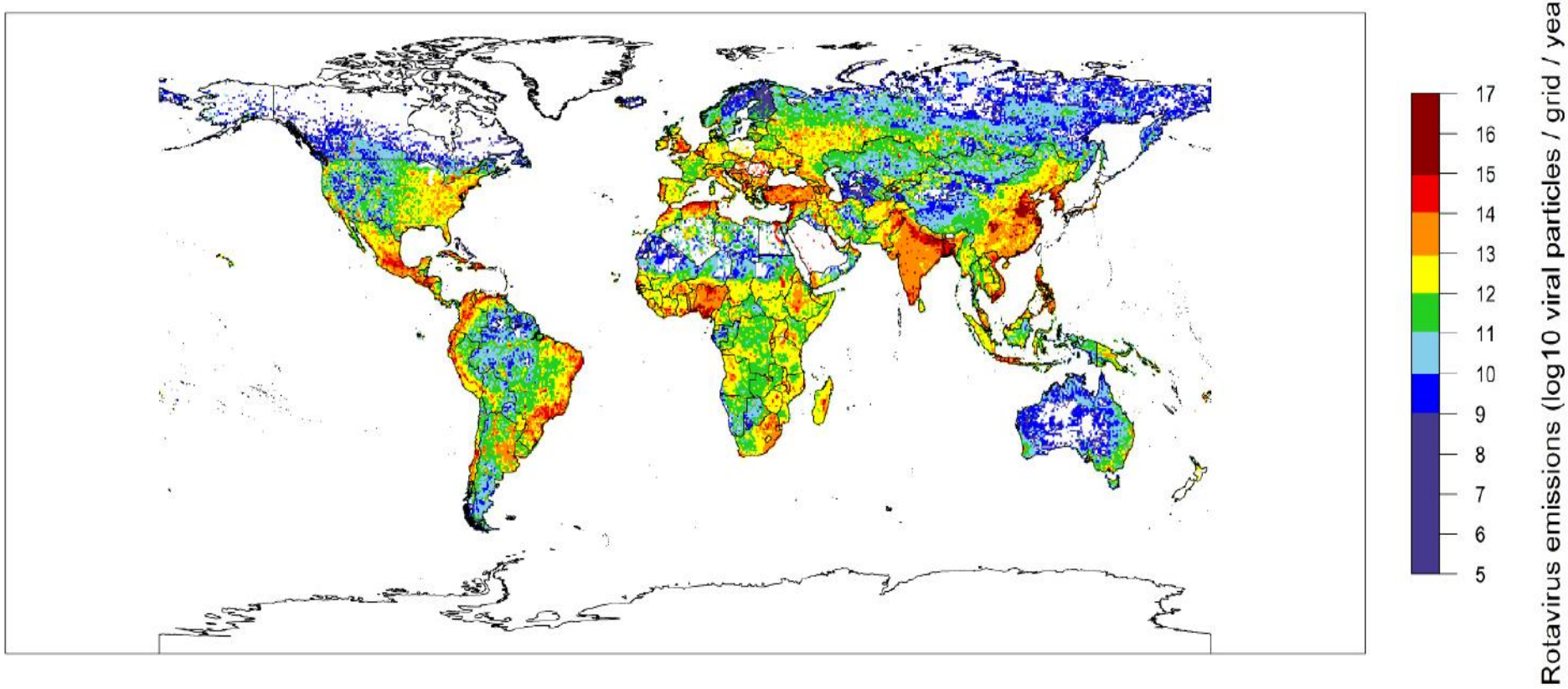


Figure 1. Total RV emissions in $\log_{10}$ viral particles per grid (based on data for approximately the year 2010).

Kiulia NM et al. Pathogens 2015

GLOBAL ÇEVRESEL ROTAVİRÜS EMİSYONU

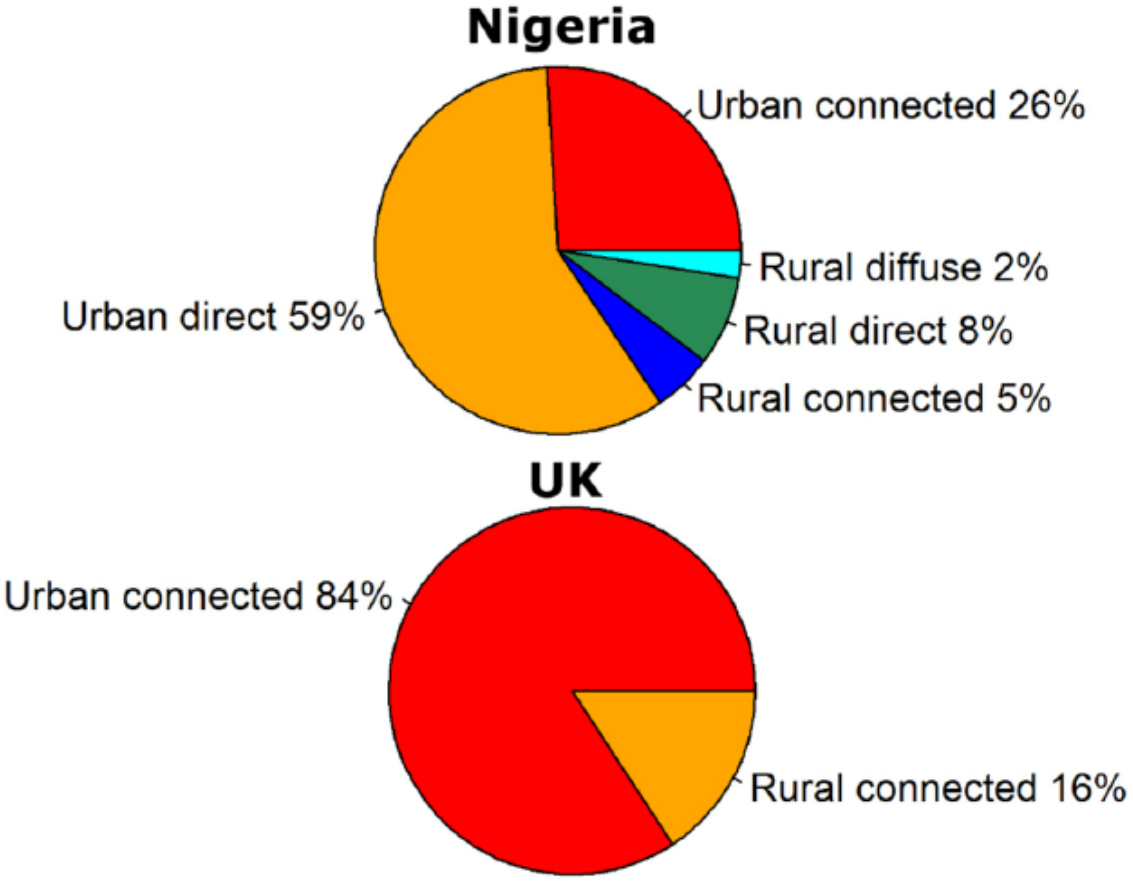


Figure 2. Fraction of the emissions caused by population with access to the different sanitation types for Nigeria (**top**) and UK (**bottom**).

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GLOBAL ÇEVRESEL ROTAVİRÜS EMİSYONU

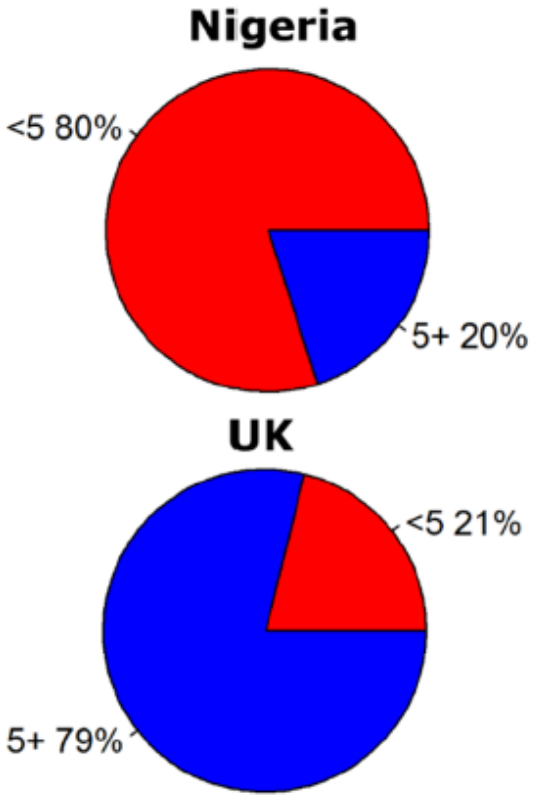

Figure 3. Fraction of the emissions caused by population from the age categories under five and over five for Nigeria (**top**) and the UK (**bottom**).

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ROTAVİRÜSÜN ORTAMDA KONTROLÜ

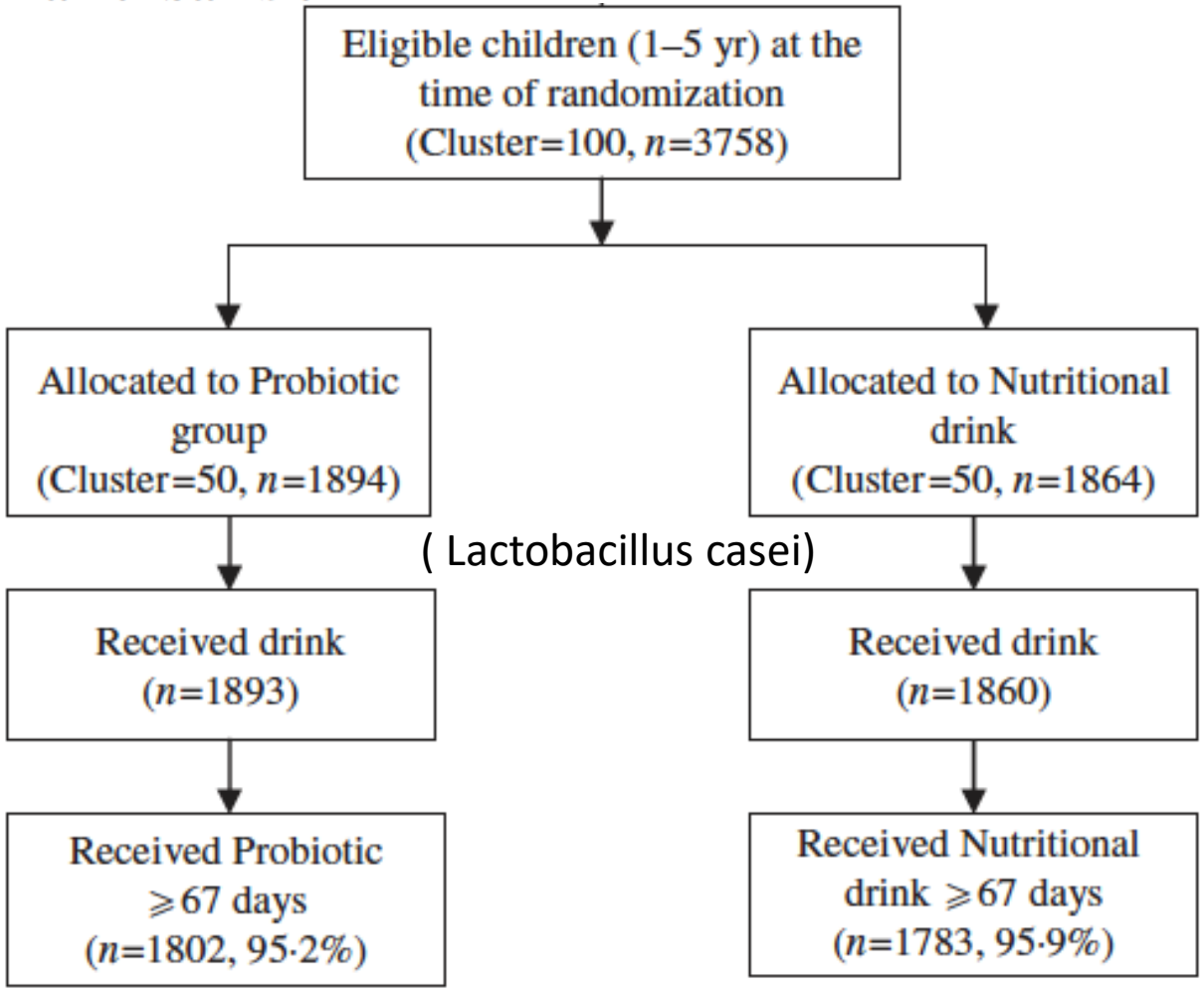
- Rotavirus ortam koşullarına dirençlidir
  - insan elinde 4 st
  - diğer vücut bölgelerinde 3 gün
  - kuru yüzeylerde 10 gün canlı kalır
- Dezenfektanlar cansız yüzeylerde etkilidir
  - hipochlorid
  - %70 etanol virüsü inaktive eder
- El dezenfeksiyonu etkilidir
  - %70 isopropanol
  - %70 etanol eldeki virüsü dezenfekte eder
- Ancak sağlık personelinin el hijyenine uyumu düşüktür
  - Ortalama %40 (%5-%81)

Epidemiol. Infect. (2011), **139**, 919–926.
doi:10.1017/S0950268810001780

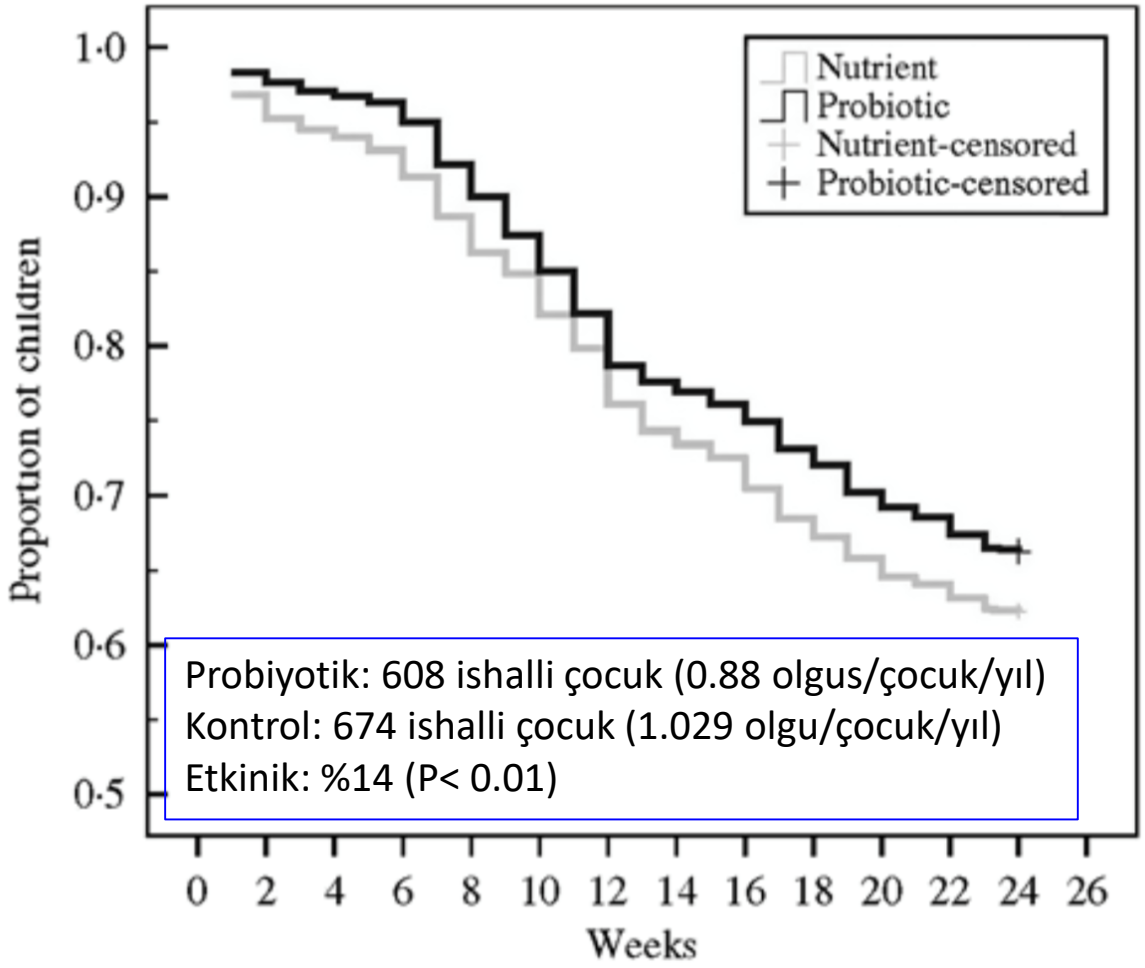
Role of probiotic in preventing acute diarrhoea in children: a community-based, randomized, double-blind placebo-controlled field trial in an urban slum

D. SUR[1]*, B.
K. NOMOT(
Y. TAKEDA

[1] *National Institu*
[2] *Basic Research*
[3] *Collaborative I*
[4] *Indian Council*



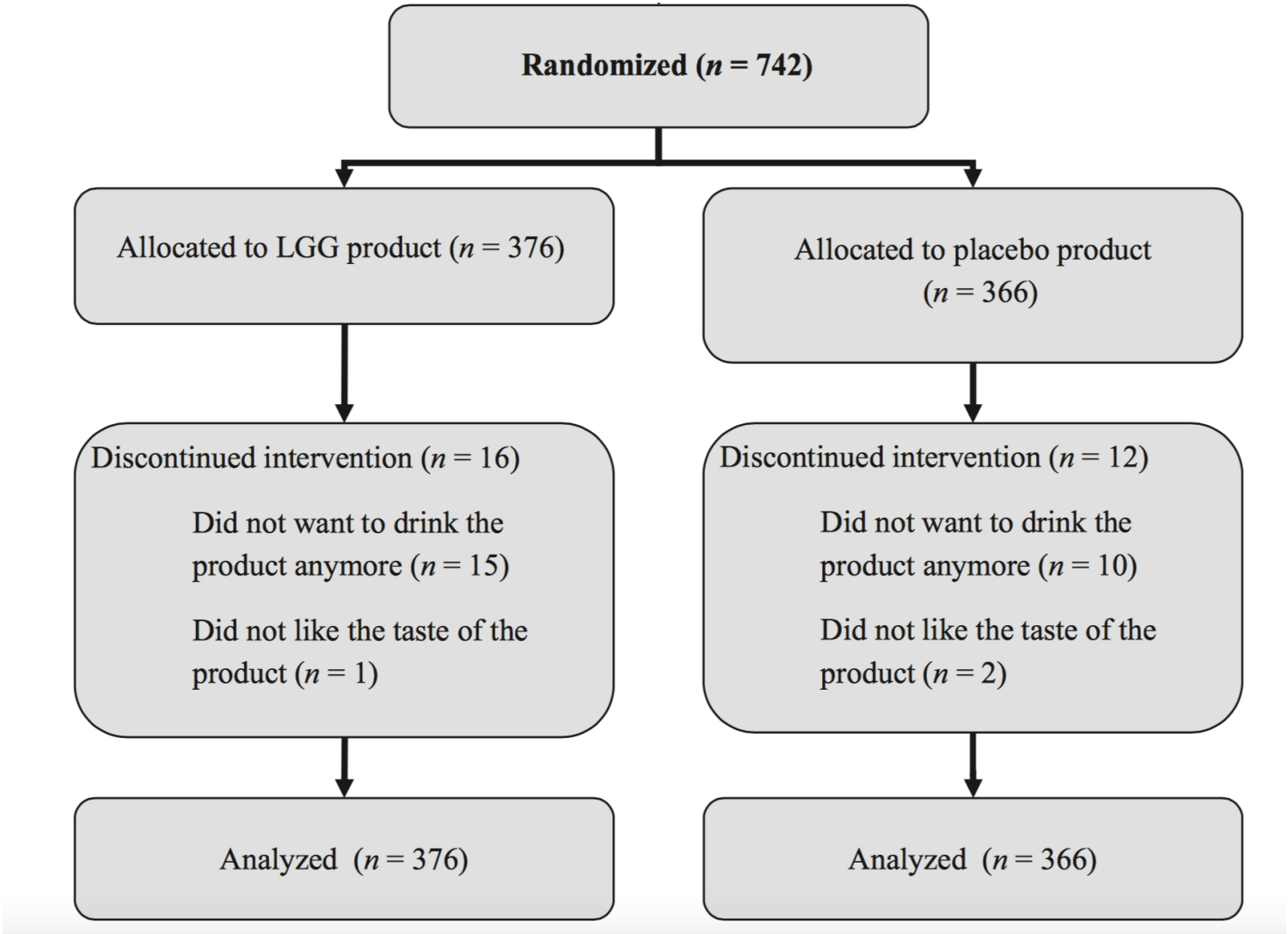
Toplumda Probiyotikler?



Probiyotik: 608 ishalli çocuk (0.88 olgus/çocuk/yıl)
Kontrol: 674 ishalli çocuk (1.029 olgu/çocuk/yıl)
Etkinik: %14 (P< 0.01)

FIGURE 1. Survival curve for "free of diarrhea" time. Kaplan-Meyer plot of proportion of children in the community remaining free of diarrhea during the 24 weeks of observation related to the regimen (probiotic vs. placebo).

Nozokomiyal RV: Lactobacillus GG



Hojsak I et al. Pediatrics 2010

Nozokomiyal RV: Lactobacillus GG

TABLE 3 Secondary Outcome Measures and Differences Between Study Groups: χ^2 Test

Variable	LGG Group ($n = 376$)	Placebo Group ($n = 366$)	RR (95% CI)	NNT (95% CI)
Vomiting episodes, *n* (%)	17 (4.5)	33 (9.0)	0.50 (0.30–0.90)	23 (13–110)
Diarrheal episodes, *n* (%)	7 (1.9)	28 (7.7)	0.24 (0.10–0.50)	18 (11–35)
Duration of gastrointestinal infection >2 d, *n* (%)[a]	19 (5.1)	45 (12.3)	0.40 (0.25–0.70)	14 (9–31)
Duration of respiratory infection >3 d, *n* (%)[a]	8 (2.1)	19 (5.2)	0.40 (0.20–0.90)	33 (17–257)
Duration of hospital intervention, median (interquartile range) d[b]	5 (3–7)	4 (4–6)	—	—

[a] Number of infections over 2 to 3 days.

[b] Difference analyzed with Mann-Whitney *U* test.

Hojsak I et al. Pediatrics 2010

Nozokomiyal RV: Lactobacillus GG

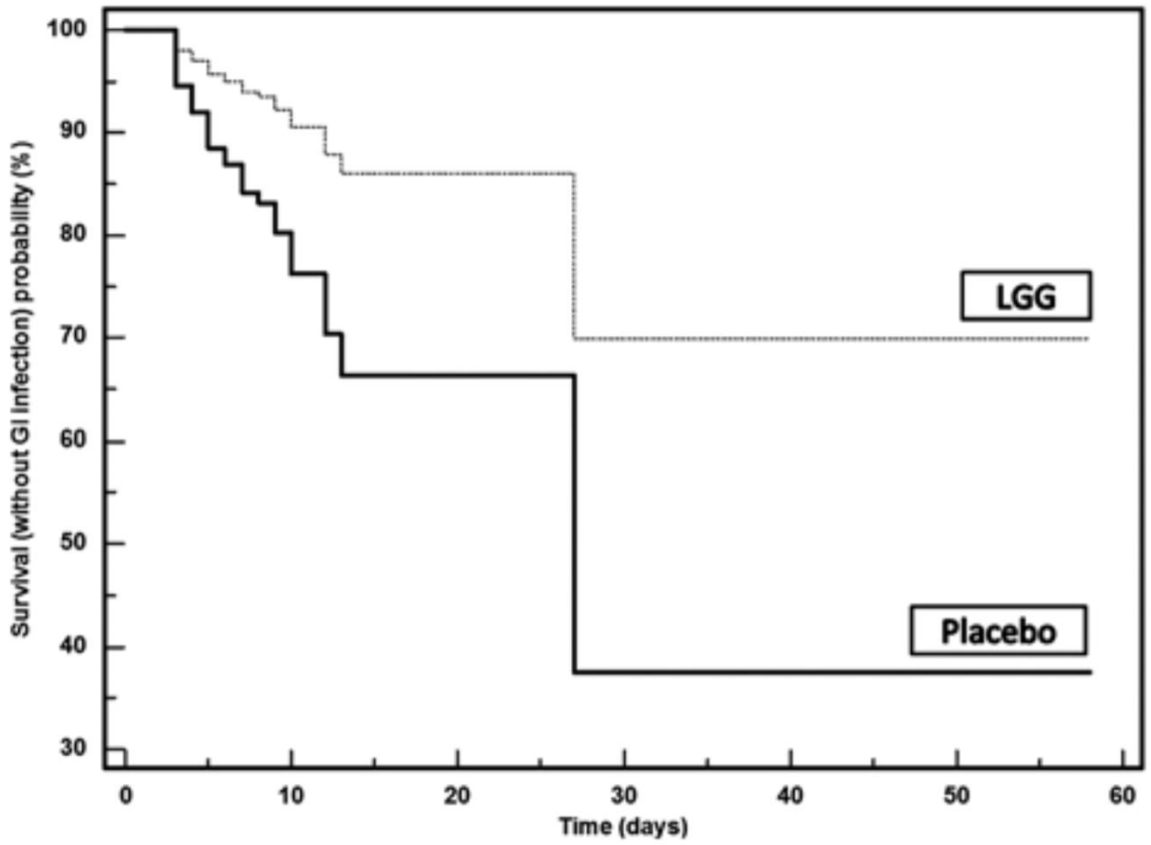


FIGURE 2. Survival curve for "free of diarrhea" time. Kaplan-Meyer plot of percentages of children in the hospital that remained free of diarrhea related to the regimen (*Lactobacillus* GG vs. placebo).

Hojsak I et al. Pediatrics 2010

	Episodes			
	Probiotic		Nutrient	
Bacteria	(*n* = 863)		(*n* = 750)	
Klebsiella spp.	40	4·6 %	35	4·7 %
Shigella spp.	52	6·0 %	43	5·7 %
Aeromonas spp.	9	1·0 %	19	2·5 %
Vibrio spp.	72	8·3 %	55	7·3 %
*Escherichia coli**	149	17·3 %	130	17·3 %
Campylobacter spp.	(*n* = 531)		(*n* = 431)	
	41	7·7 %	22	5·1 %
Parasites	(*n* = 760)		(*n* = 662)	
Entamoeba histolytica	15	2·0 %	8	1·2 %
Cryptosporidium spp.	71	9·3 %	86	13·0 %
Giardia lamblia	272	35·8 %	241	36·4 %
Viruses	(*n* = 769)		(*n* = 666)	
Rotavirus	57	7·4 %	56	8·4 %
Adenovirus	48	6·2 %	34	5·1 %
Viruses	(*n* = 852)		(*n* = 743)	
Sapovirus	25	2·9 %	21	2·8 %
Astrovirus	26	3·1 %	19	2·6 %
Norovirus GI	25	2·9 %	27	3·6 %
Norovirus GII	25	2·9 %	22	3·0 %

İLK 6 AY SADECE ANNE SÜTÜ: META-ANALİZ

Indian J Pediatr
DOI 10.1007/s12098-015-1854-8

ORIGINAL ARTICLE

Effect of Exclusive Breastfeeding on Rotavirus Infection among Children

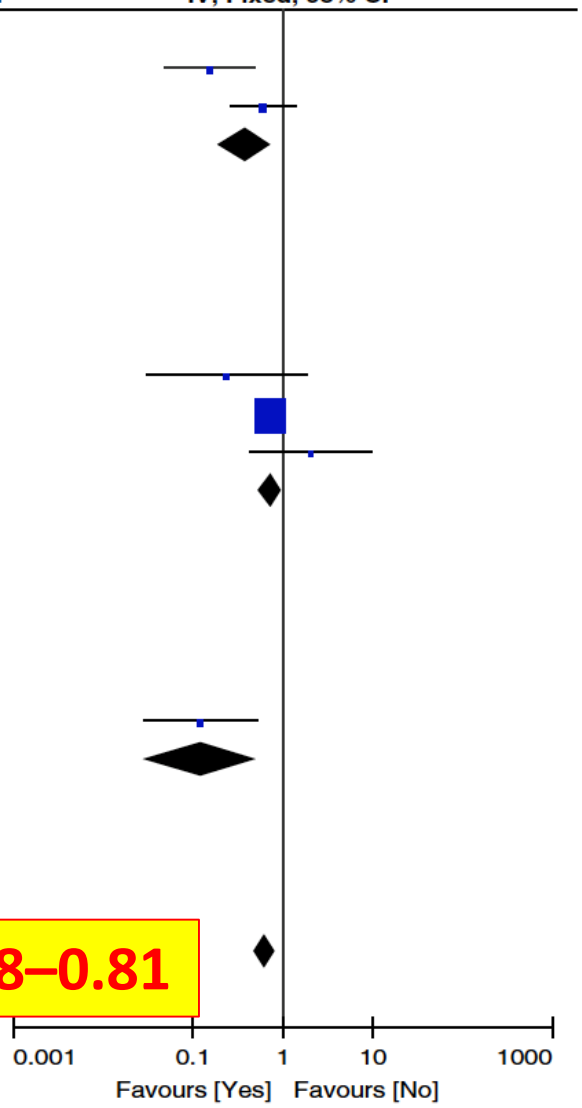
Aleksandra Krawczyk[1] · Melissa Glenda Lewis[2] · Bhumika T. Venkatesh[3] · Sreekumaran N. Nair[3]

Received: 30 December 2014 / Accepted: 16 July 2015

İLK 6 AY SADECE ANNE SÜTÜ: META-ANALİZ

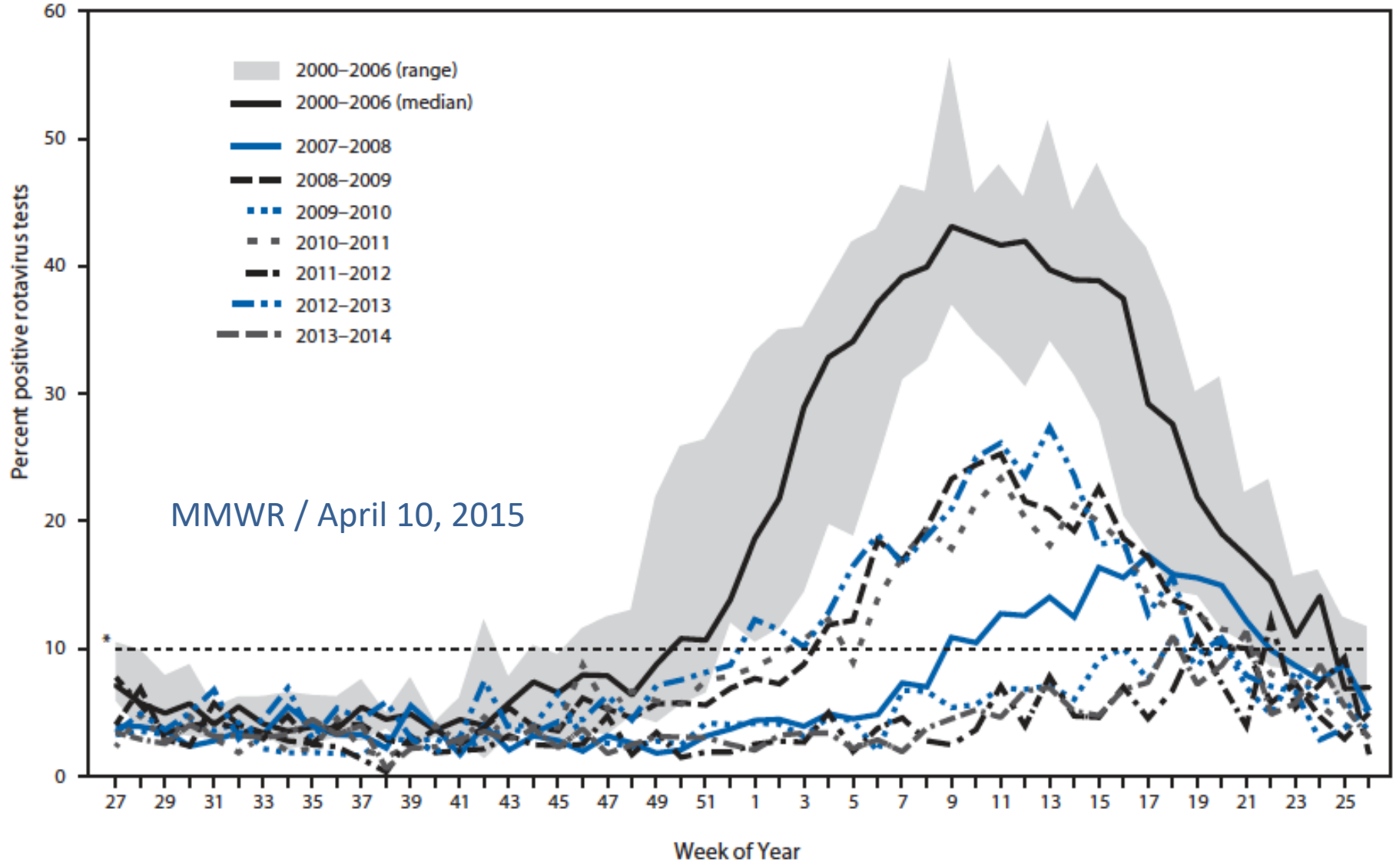
Study or Subgroup	Exclusive Breastfeeding Events	Exclusive Breastfeeding Total	Non-exclusive Breastfeeding Events	Non-exclusive Breastfeeding Total	Weight	Odds Ratio IV, Fixed, 95% CI
1.1.1 Case control						
Clemens 1993	3	428	99	2261	5.0%	0.15 [0.05, 0.49]
Wobudeya 2011	11	28	80	154	9.9%	0.60 [0.26, 1.36]
Subtotal (95% CI)		**456**		**2415**	**15.0%**	**0.38 [0.19, 0.74]**
Total events	14		179			
Heterogeneity: Chi² = 3.53, df = 1 (*P* = 0.06); I² = 72%						
Test for overall effect: Z = 2.84 (*P* = 0.004)						
1.1.2 Cohort studies						
Duffy 1996	1	19	34	178	1.6%	0.24 [0.03, 1.82]
Kurugöl 2003	94	274	272	646	77.5%	0.72 [0.53, 0.96]
Sudipta2007	10	13	13	21	2.7%	2.05 [0.43, 9.78]
Subtotal (95% CI)		**306**		**845**	**81.8%**	**0.73 [0.55, 0.97]**
Total events	105		319			
Heterogeneity: Chi² = 2.87, df = 2 (*P* = 0.24); I² = 30%						
Test for overall effect: Z = 2.17 (*P* = 0.03)						
1.1.3 Cross-sectional						
John 2014	2	44	58	206	3.2%	0.12 [0.03, 0.52]
Subtotal (95% CI)		**44**		**206**	**3.2%**	**0.12 [0.03, 0.52]**
Total events	2		58			
Heterogeneity: Not applicable						
Test for overall effect: Z = 2.85 (*P* = 0.004)						
Total (95% CI)		**806**				
Total events	121					
Heterogeneity: Chi² = 14.52, df = 5 (*P* = 0.01); I² = 66%						
Test for overall effect: Z = 3.58 (*P* = 0.0003)						
Test for subgroup differences: Chi² = 8.13, df = 2 (*P* = 0.02), I² = 75.4%						

OR=0.62, 95 % CI=0.48–0.81



ROTAVİRÜS AŞISI

FIGURE 1. Rotavirus season duration and peak activity by reporting years (prevaccine 2000–2006 and postvaccine 2007–2011), NREVSS data — United States, 2000–2014

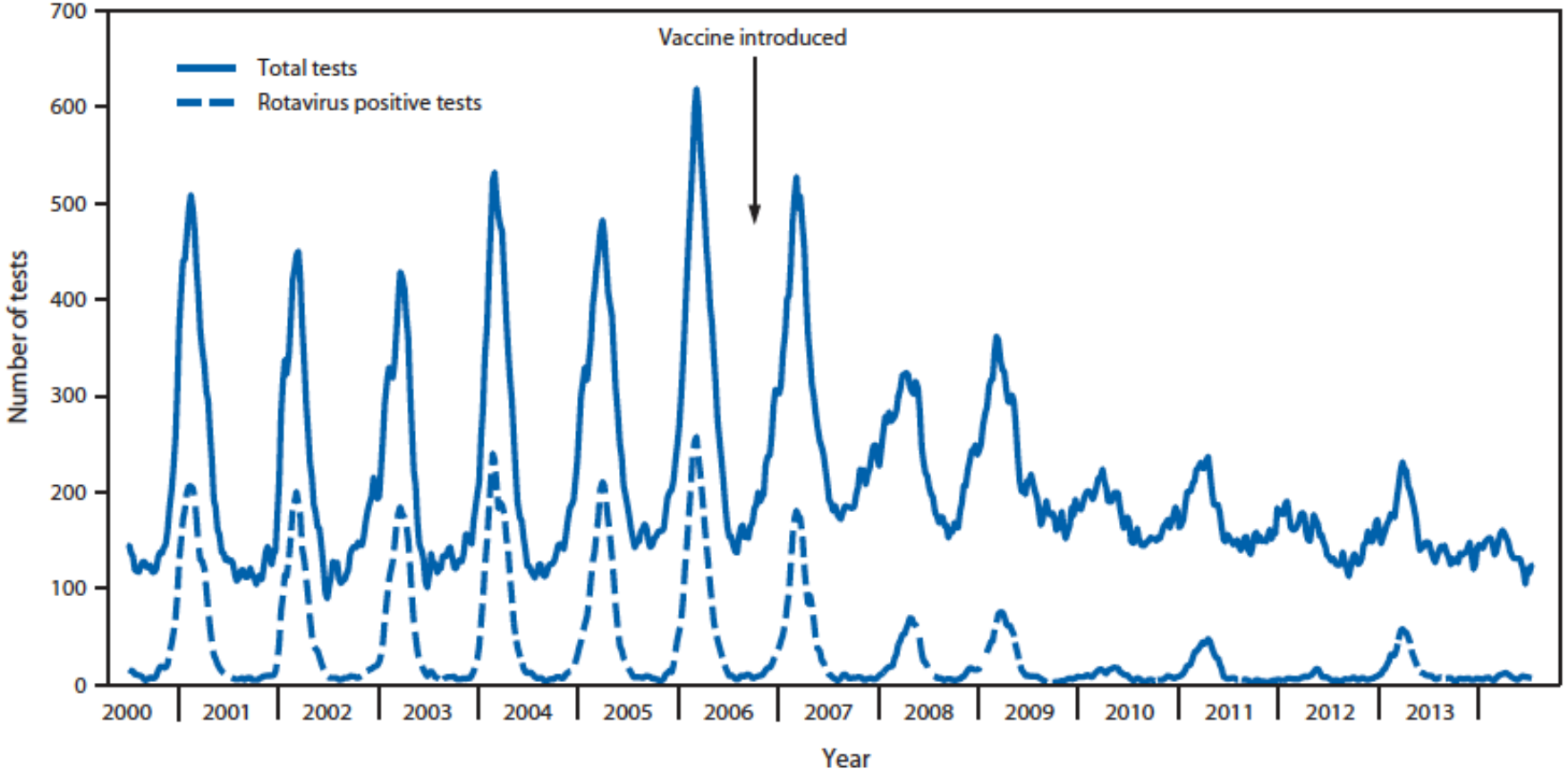


* Dashed line indicates the 10% threshold of numbers of positive test results, which is used to determine onset and offset of a rotavirus season.

ROTAVİRÜS AŞISI

Morbidity and Mortality Weekly Report

FIGURE 2. Total and positive rotavirus tests, NREVSS data — United States, 2000–2014



MMWR / April 10, 2015

ROTAVİRÜS AŞISI

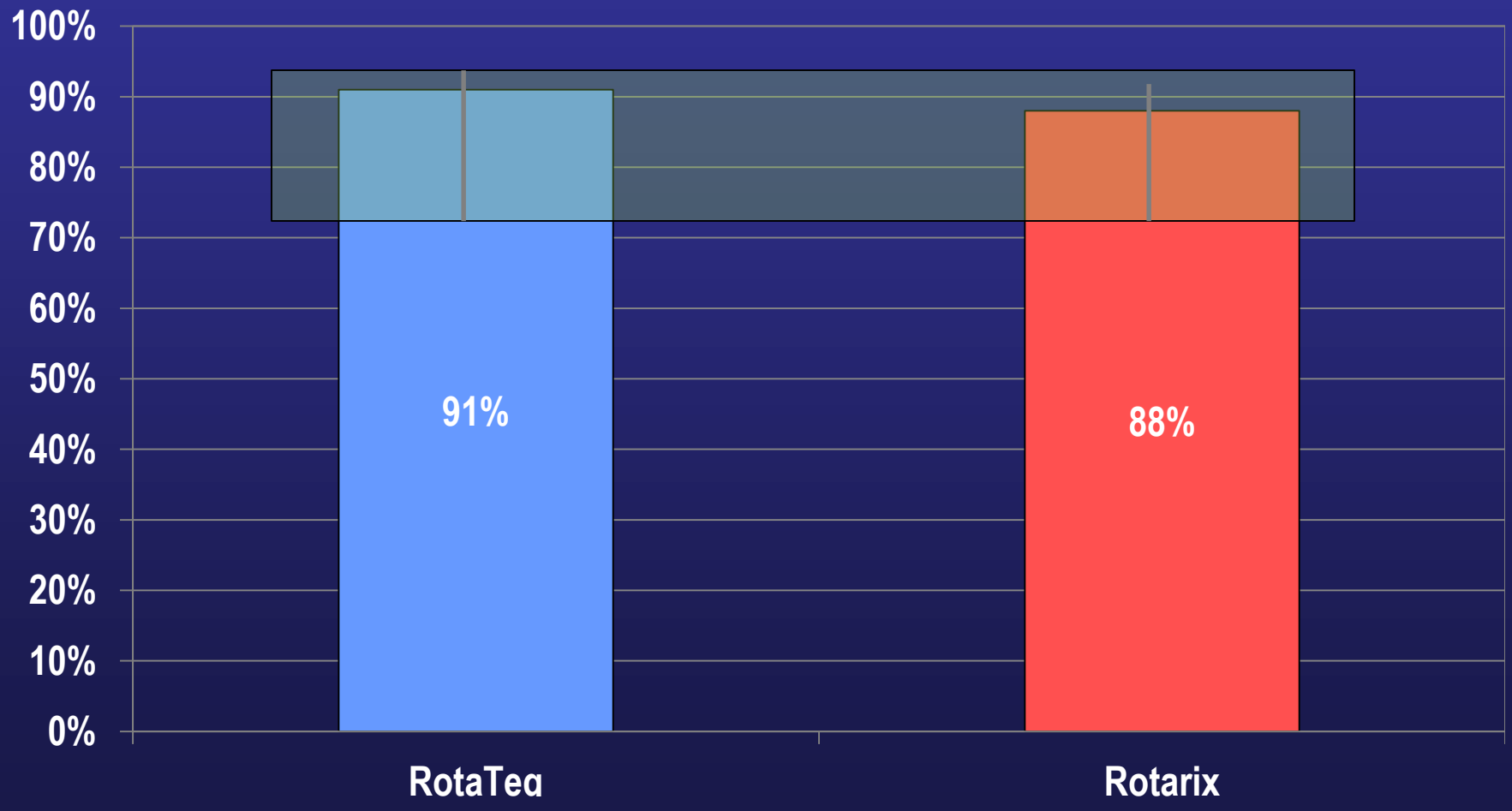
TABLE 2. Rotavirus tests and percent rotavirus positive results from 23 continuously reporting NREVSS laboratories , by season and region — National Respiratory and Enteric Virus Surveillance System, United States 2000–2014

Season	No. tests performed	Positive test results		Decline in no. of positive tests (%)*
		No.	%	
All regions (23 laboratories)				
2000–2006†	12,184	3,109	25.5	NA§
2007–2008	12,544	1,130	9	63.7
2008–2009	12,322	1,312	10.6	57.8
2009–2010	9,684	447	4.6	85.6
2010–2011	9,168	817	8.9	73.7
2011–2012	8,335	315	3.8	89.9
2012–2013	8,162	893	10.9	71.3
2013–2014	7,080	342	4.8	89

MMWR / April 10, 2015

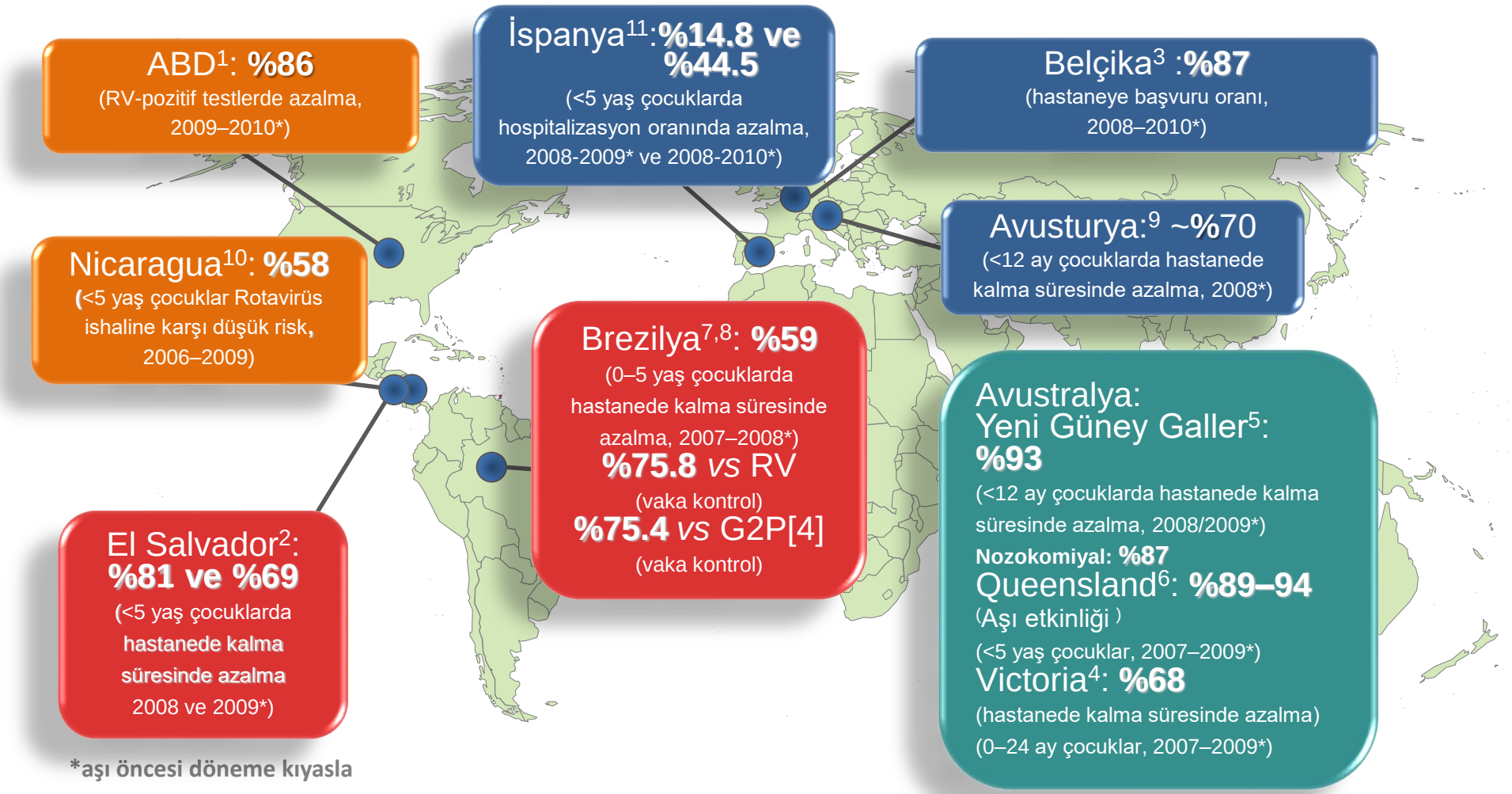
Emerging Infections Program (EIP)

Full course VE and 95% CI among children aged ≥ 8 months



Cortese MM et al. Pediatrics. 2013;132:e25–e33.

Rotarix™ ile aşılama sonrası RVGE'den hastaneye yatış ve hastane kaynaklı enfeksiyon sıklığında görülen değişimler

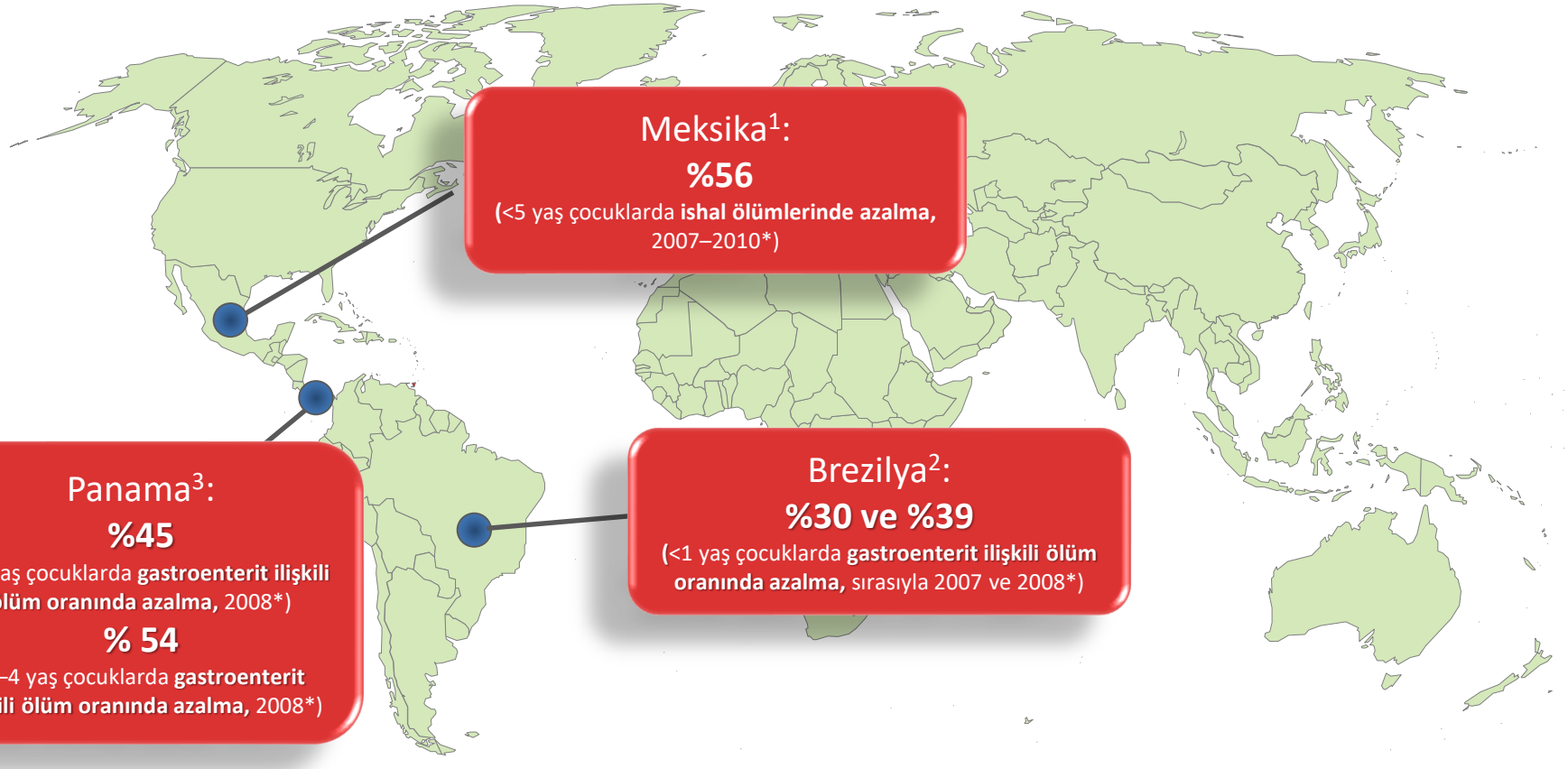


*aşı öncesi döneme kıyasla

1. Tate J et al. Pediatr Infect Dis J 2011; 30: S30–4; 2. Yen C et al. Pediatr Infect Dis J 2011;30:S6–10; 3. Braeckman T et al. BMJ 2012;345:1-13 4. Buttery J et al. Pediatr Infect Dis J 2011;30:S25–9; 5. Macartney K et al. J Paediatr Child Health. 2011;47:266–70; 6. Field EJ et al. Pediatrics 2010;126:e506–e512; 7. Safadi MA et al. Pediatr Infect Dis J 2010;29:019–22; 8. Justino MCA et al. Pediatr Infect Dis J 2011;30. 9. Paulke-Korinek M et al. Pediatr Infect Dis J 2010; 29: 319–23;. 10. Patel M, et al. JAMA 2009;301:2243–51; 11. Martinón-Torres F et al Human Vaccines & Immunotherapeutics 2012; 8:7, 946–952

Rotarix™ ile aşılama sonrası ishale bağlı tüm ölümlerde görülen azalma oranları

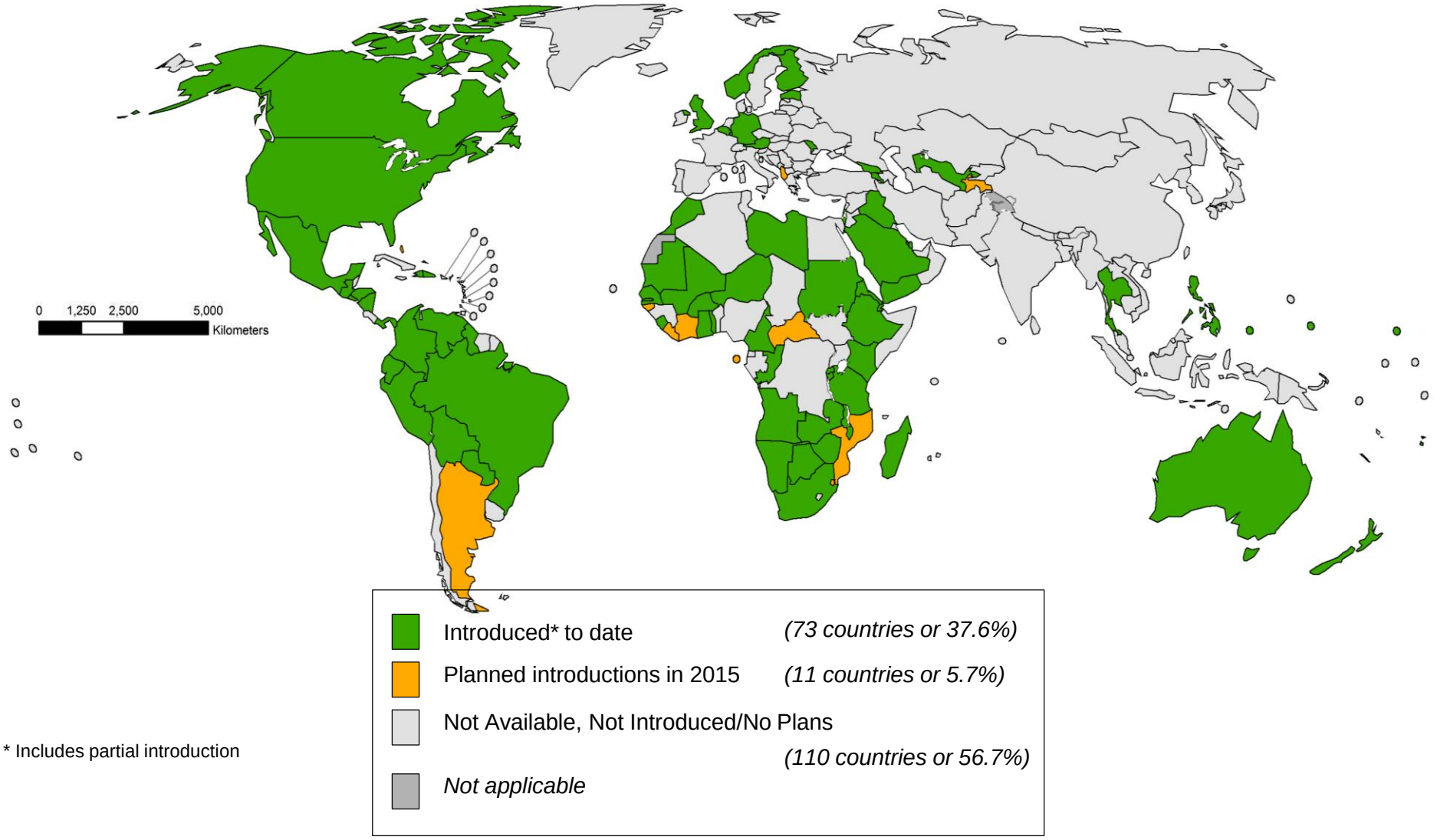
Rotavirüs sezonunda % azalma



* aşı öncesi döneme kıyasla

1. Richardson V, *et al. N Engl J Med* 2011;365:772–3;
2. Lanzieri T *et al*. *Int J Infect Dis* 2011;15:e206-e210.
3. Bayard V *et al*. *Int J Infect Dis*. 2012;16:e94–8

Countries with **Rotavirus** vaccine in the national immunization programme; and planned introductions in 2015



* Includes partial introduction

Data source: WHO/IVB Database, as of 19 December 2014
Map production Immunization Vaccines and Biologicals (IVB), World Health Organization

WHO

Fayda-Risk Oranı

Events	Benefits
	Rotavirus-associated Sequalae Averted*
Deaths	14 (10–19)
Hospitalizations	53,444 (37,622–72,882)
Emergency department visits	169,949 (118,161–238,630)
Events	**Risks**
	Excess Intussusception Cases and Sequalae†
Deaths	0.2 (0.1–0.3)
Hospitalizations	45 (21–86)
Emergency department visits	13 (6–25)

Desai et al. *PIDJ* 2012

Fayda-Risk Oranı

Events	Benefit–risk Ratio[‡§]
Deaths	71 (48–112)
Hospitalizations	1093 (688–1902)[¶]
Emergency department visits	12,115 (7528–21,448)

Desai et al. *PIDJ* 2012

SONUÇ: IS

Taken together, these data indicate that there may be a small increased risk of IS temporarily associated with *Rotarix*™ or *RotaTeq*® vaccination, dependent on the population evaluated, translating into 1–2 additional cases per 100,000 infants vaccinated. This is substantially lower than the risk of IS associated with the human rhesus tetravalent reassortant vaccine *RotaShield*™ (Wyeth), withdrawn in 1999, and insufficiently great to outweigh the substantive benefits of vaccination.

Conference report / Vaccine 30 (2012) 2237–2244

Vaccine 31 (2013) 979–986

Contents lists available at SciVerse ScienceDirect

Vaccine

journal homepage: www.elsevier.com/locate/vaccine

Estimating and comparing the clinical and economic impact of paediatric rotavirus vaccination in Turkey using a simple versus an advanced model

Mustafa Bakir[a], Baudouin Standaert[b,*], Ozden Turel[c,1], Zeynep Ece Bilge[d], Maarten Postma[e]

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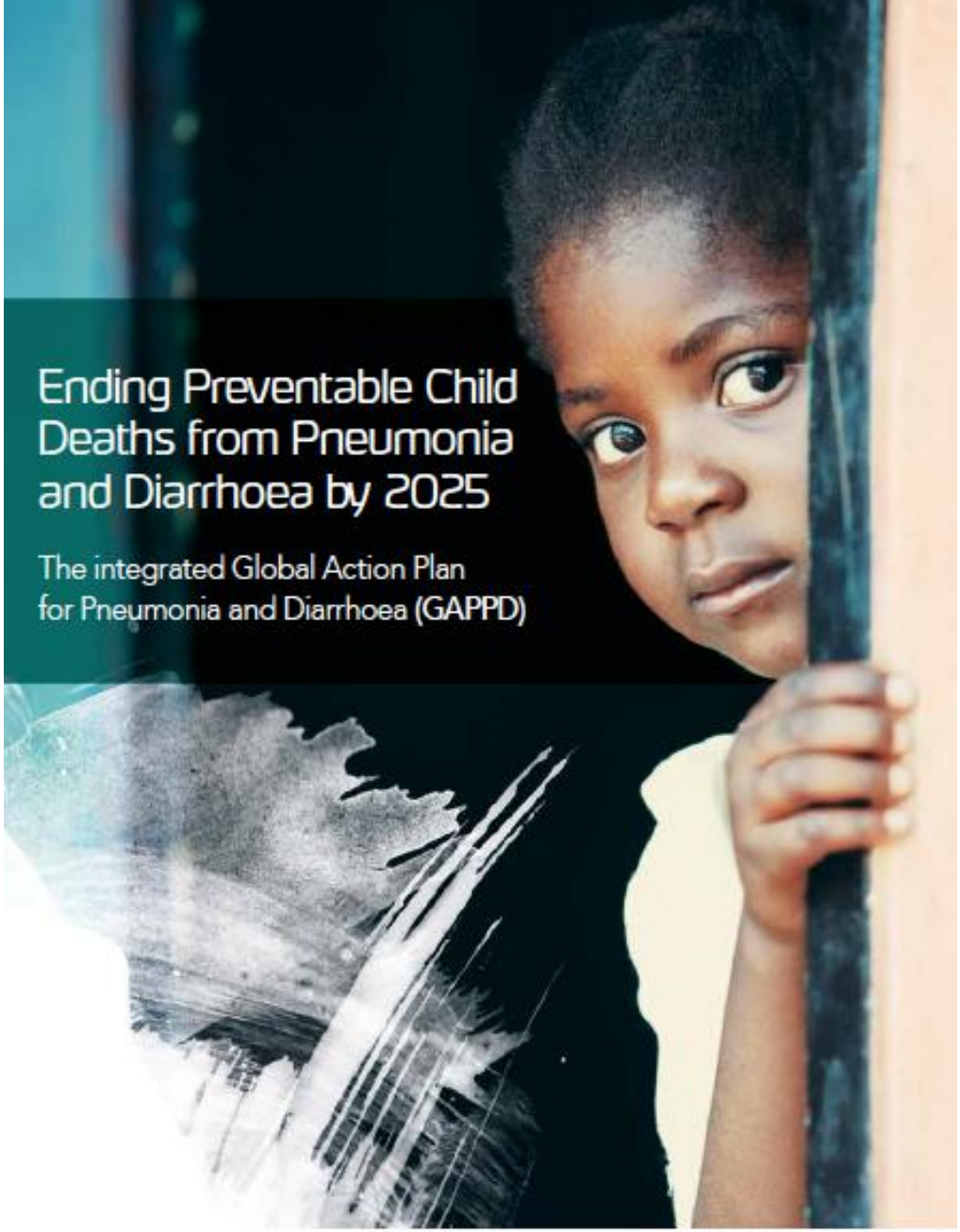
[d] *GlaxoSmithKline Turkey, Buyukdere Cd. 173-B, 1 Levent, Istanbul, Turkey*
[e] *Unit of Pharmacoepidemiology & Pharmacoeconomics (PE2), Department of Pharmacy, University of Groningen, Groningen, The Netherlands*

Table 4
Projected numbers of rotavirus cases by severity, rotavirus deaths, cost and cost offset, and QALYs lost for each model type with and without vaccination.

	Unvaccinated	Vaccinated	Difference (%)
Simple			
Mild	539,280	93,565	−445,715 (83%)
Moderate	539,280	52,580	−486,700 (90%)
Severe	36,797	1840	−34,957 (95%)
Deaths	13	1	−12 (92%)
Cost/cost offset[a]	$32,480,486	$2,581,784	−$29,898,702 (92%)
QALY lost	−2973	−369	2604 (88%)
Advanced (base case)			
Rotavirus diarrhoea events	539,280	36,688	−502,591 (93%)
1st line	96,554	6569	−89,985 (93%)
2nd line	442,726	30,120	−412,606 (93%)
Emergency visit	9653	657	−8996 (93%)
Hospitalisation	36,797	2257	−34,540 (94%)
Deaths	13	1	−12 (92%)
Cost/cost offset[a]	$32,483,127	$3,110,586	−$29,372,541 (90%)
QALY lost	−2663	−254	2409 (90%)

[a] Unvaccinated and vaccinated columns show cost, difference column shows cost offset.



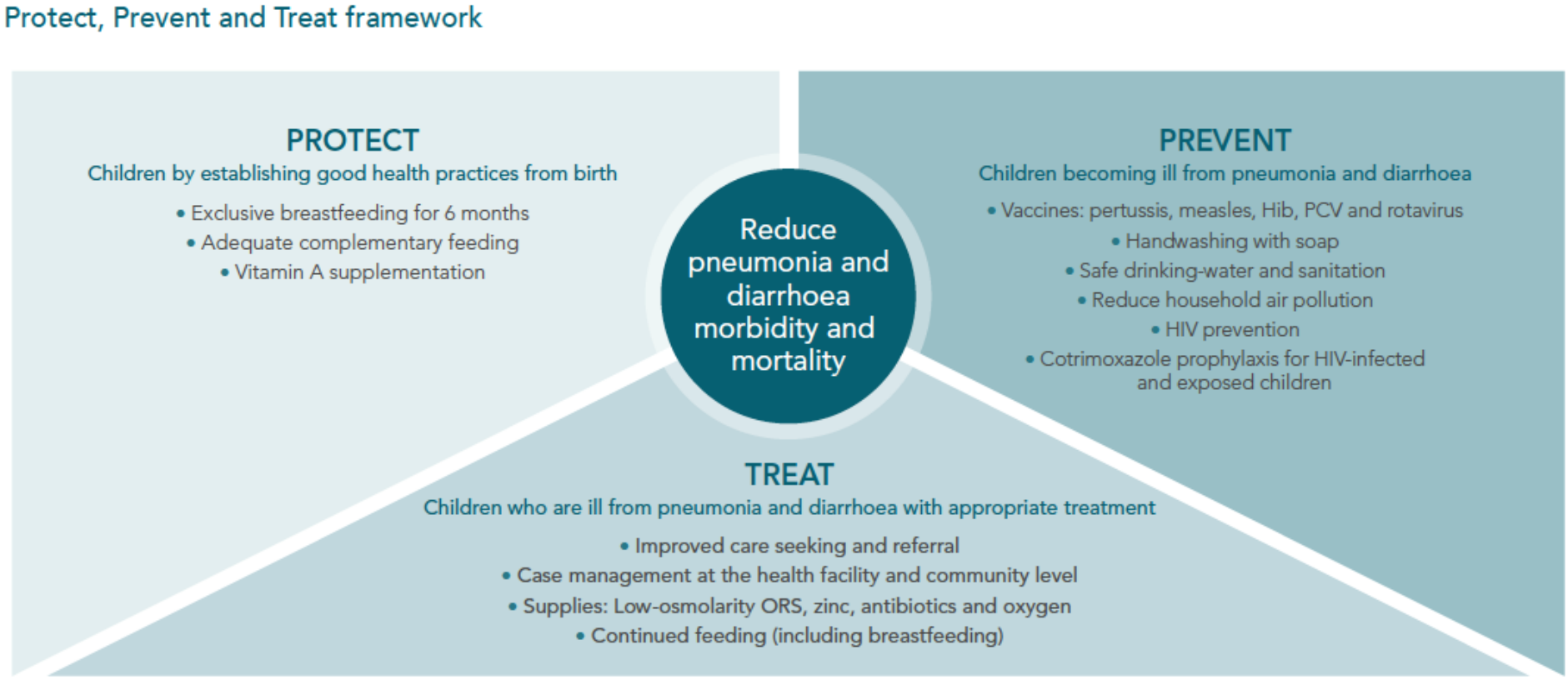
Ending Preventable Child Deaths from Pneumonia and Diarrhoea by 2025

The integrated Global Action Plan for Pneumonia and Diarrhoea (GAPPD)

unicef

World Health Organization

<5y Mortalite Ucuza Nası Önlenir?



UNICEF's State of the World's Children 2013

Diarrhoea

Vitamin A
suplementation

Vaccination : rotavirus

Safe water
& improved sanitation

Los-osmolarity ORS, zinc
& continued feeding

Protect

Breastfeeding
promotion & support

Adequate complementary
feeding

Prevent

Measles
Vaccination

Handwashing
with soap

Prevention of HIV

Treat

Improved care seeking
behaviour and referral

Improved case management
at community and health
facility levels

Continued feeding

Pneumonia

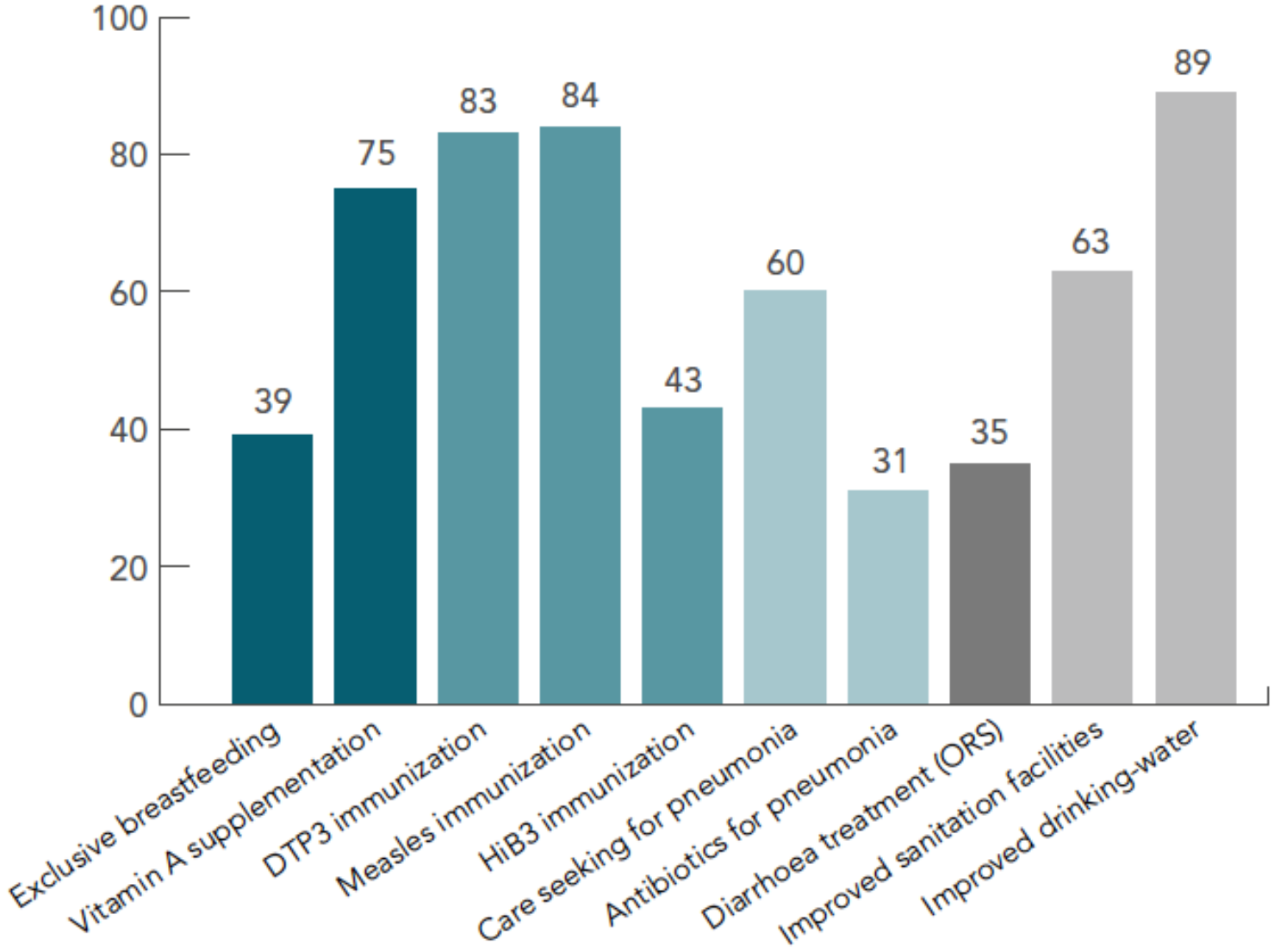
Vaccination
(PCV, Hib, pertussis)

Reduced household
air pollution

Antibiotics
for pneumonia

Oxygen therapy
(where indicated)

BASİT ÖNLEMLERE ÇOCUKLARIN ULAŞIM ORANLARI



UNICEF's State of the World's Children 2013

UNICEF: 7 Maddede İshalin Kontrolü

- **Tedavi paketi**
  1. Dehidratasyonu önlemek için sıvı tedavisi
  2. Çinko tedavisi
- **Önleme paketi**
  3. Rotavirüs ve kızamık aşılaması
  4. Sadece anne sütü ve A vitamini teşviki
  5. Sabunla el yıkama teşviki
  6. Temiz ve kaliteli su sağlanması ve evde güvenli saklanması
  7. Sanitasyon

http://www.7pointplan.org/diarrhoea-control.html

TEŞEKKÜRLER

PRISM

- Post Licensure Rapid Immunization Safety Monitoring System
- Part of FDA sponsored Mini-Sentinel pilot program developed to conduct active surveillance for safety
- Partners are national insurance companies
- Data from 2004 – mid 2011 for rotavirus analysis

Doses Administered - PRISM

Dose	RotaTeq	Rotarix
1	507,874	53,638
2	Not specified	49,460
3	Not specified	--
Total	1,277,556	103,098

PRISM Analysis - 2013
RotaTeq & Rotarix – Dose 1

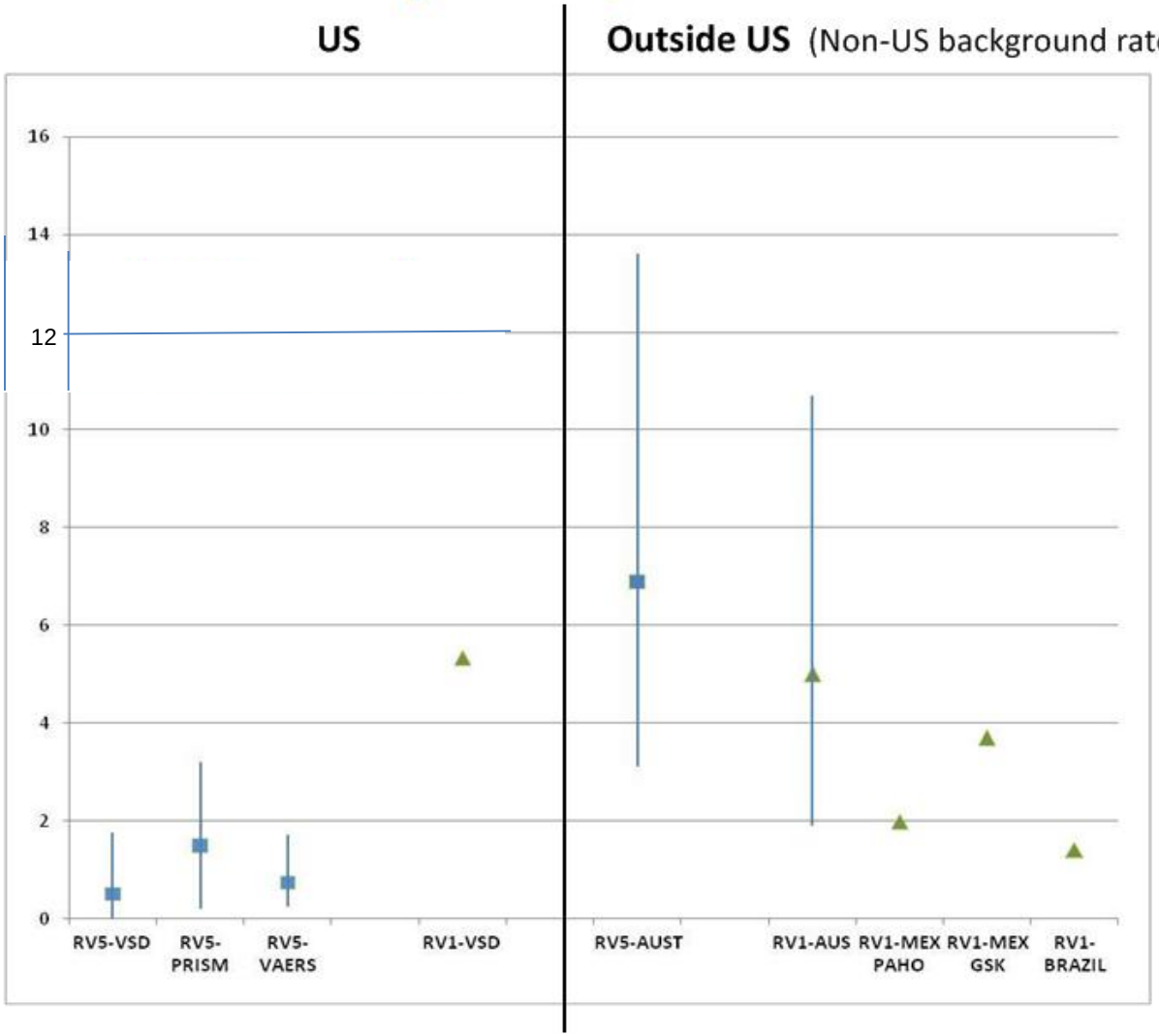
Vaccine	Doses Administered	Attributable Risk/100,000 Vaccinated Infants
RotaTeq	507,874	1.1-1.5
Rotarix	53,638	N too small – 1 IS case after Dose 1

"Other results suggest increased risk for Rotarix, but are inconclusive"

FDA Mini Sentinel Güvenlik Sürveyans Sonuçları

- RotaTeq ile İS arasında ilişki
  - 1. dozdan sonra daha yükek
    - 1-7. Gün – 1.12 fazladan olgu /100,000
    - 1-21. Gün – 1.54 fazladan olgu /100,000
    - A.B.D.'de 1 yaş altı genel İS yatış oranı ~34/100,000 bebek
  - 2 ve 3. doz sonrası İS'da önemli önemli artış yok
- Rotarix'e bağlı İS analizi için aşı doz sayısı yeterli değil

Attributable Risk Estimates
Excess IS cases per 100,000 Vaccinated Infants



Estimates of Benefits: Results *Rotavirus Disease Prevented with Vaccination*

Rotavirus Events	Without Vaccine	With Vaccine	Number (%) Prevented with Vaccination
Deaths	33	19	14 (42%)
Hospitalizations	71,175	17,731	53,444 (75%)
ED Visits	226,126	56,117	169,949 (75%)

Desai et al. *PIDJ* 2012

Norovirus is a very contagious virus that can infect anyone. You can get it from an infected person, contaminated food or water, or by touching contaminated surfaces. The virus causes your stomach or intestines or both to get inflamed. This leads you to have stomach pain, nausea, and diarrhea and to throw up. These symptoms can be serious for some people, especially young children and older adults...

More ›

CDC Vital Signs Report

Preventing Norovirus Outbreaks, Food Service has a Key Role

Norovirus is the leading cause of disease outbreaks from contaminated food in the United States. Learn about food safety practices that can help prevent these outbreaks.

ABOUT NOROVIRUS

Overview about the virus, how it spreads, symptoms, treatment...

PREVENTING NOROVIRUS INFECTION

You can help protect yourself and others from norovirus infection by following some simple tips...

Norovirus Outbreaks