PREVALENCE OF ROTAVIRUS AMONG PEOPLE 5 YEARS AND OLDER WITH DIARRHEA: A SYSTEMATIC REVIEW & META-ANALYSIS

Lola Arakaki, Jessie Seiler, Deanna Tollefson, Paul Drain September 3, 2019



PROJECT TEAM



Lola Arakaki,
MPH
PhD Student
Epidemiology
Research Assistant



MBchB
MPH Student
Global Health
Research Assistant

Brenda Kharono,



Jessie Seiler,
MPH
PhD Student
Epidemiology
Research Assistant



MPH
PhD Student
Implementation Science
Project Manager

Deanna Tollefson,



Paul Drain,
MD, MPH, FACP
Assistant Professor
Global Health
Faculty Lead



PROJECT OVERVIEW



WORK ORDER

Conduct a systematic literature review and meta-analysis of rotavirus prevalence among persons ≥5 years of age with diarrhea by age strata

Timeline: March – August 2019



PowerPoint slide deck

Excel workbook

- Summary of Included Studies
- Results tables
- Dataset
- Data dictionary

Meta-analysis code (R files)



PRESENTATION OVERVIEW

OBJECTIVE: REVIEW METHODS, SHARE RESULTS, AND DISCUSS FINDINGS





CONTEXT



<u>UNCERTAIN ROTAVIRUS BURDEN IN PEOPLE</u>

≥5 YEARS OLD



BACKGROUND

- Rotavirus is leading cause of severe diarrhea in young children globally
- Other ages less affected but still at risk, especially:
 - People who care for children
 - Immunocompromised individuals
 - Older adults

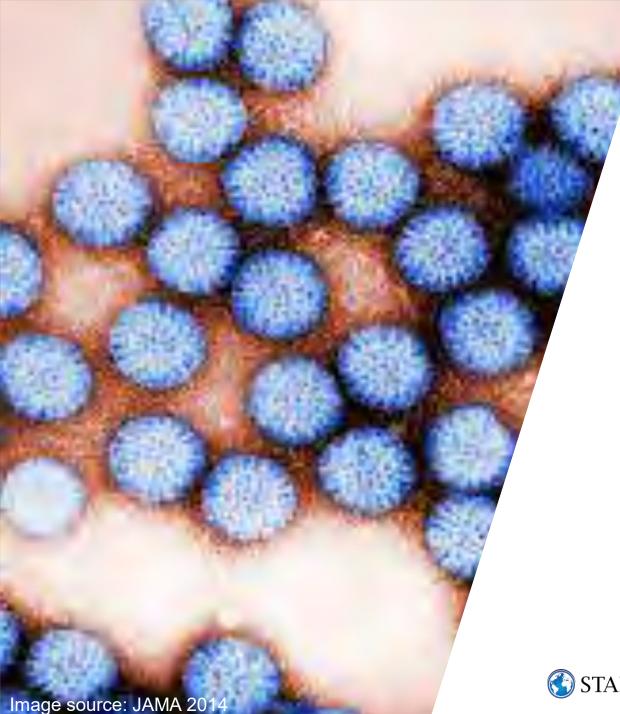


KNOWLEDGE GAP

- Overall burden of rotavirus in population
 ≥5 years not well understood
- Percent of diarrhea due to rotavirus in population ≥5 years not well documented
- Estimates of rotavirus in older populations needed to understand spread and severity of disease globally

What is the prevalence of rotavirus occurring in populations ≥5 years old with diarrhea?





PURPOSE OF STUDY

Goal: Determine proportion of diarrhea cases due to rotavirus among older children and adults globally

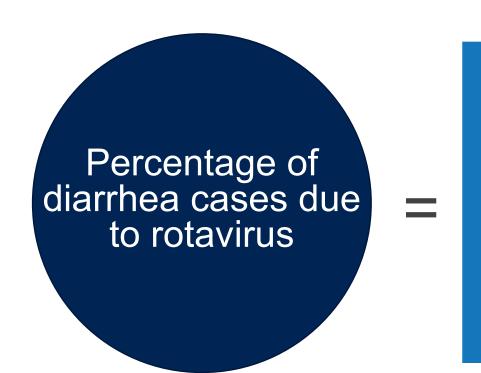
Conduct systematic review and meta-analysis following PRISMA guidelines to:

- Quantify proportion of diarrhea cases due to rotavirus among persons ≥5 years old
- Estimate this proportion by age strata

METHODS



CONDITIONAL ROTAVIRUS PREVALENCE CHOSEN AS OUTCOME



Number of people with laboratory confirmed rotavirus

Number of symptomatic people tested for rotavirus

FOLLOWED STANDARD CRITERIA FOR ROTAVIRUS SYSTEMATIC REVIEWS



INCLUSION CRITERIA

- Outcome: rotavirus prevalence (% diarrhea due to rotavirus)
- Population: persons ≥5 years old symptomatic with diarrhea/gastroenteritis
- Case definition: lab confirmation of rotavirus
- Study size: at least 100 symptomatic individuals who were ≥5 years old
- Study length: ≥1 year of data
- Publication date: 1990 or later



EXCLUSION CRITERIA

- Case studies, outbreak investigations, conference abstracts, systematic reviews
- Non-English full-text
- No laboratory confirmation of rotavirus
- Special populations (e.g., military, schools, hospital-acquired infections)



DATA COLLECTION PROCESS

SEARCH DETAILS



- Search strings modeled after IHME
- Databases: PubMed & EMBASE
- Date conducted: April 5, 2019

SYSTEMATIC REVIEW PROCESS

- Followed PRISMA guidelines
- Double screening and consensus required at all levels
- High barrier for exclusion of abstracts

SEARCH STRING USED*



('rotavirus'/exp OR 'rotavirus' OR 'human rotavirus'/exp OR 'human rotavirus' OR 'rotavirus infection'/exp OR 'rotavirus infection' OR rotavirus:ti,ab OR rotaviruses:ti,ab) AND ('prevalence'/exp OR 'mortality'/exp OR burden:ti OR etiology:ti OR aetiology:ti OR mortality:ti OR death:ti OR deaths:ti OR fatal:ti OR fatality:ti OR epidemiology:ti) AND [1990-3000]/py AND [humans]/lim NOT ('colitis':ti,ab OR enterocolitis:ti,ab OR 'inflammatory bowel':ti,ab OR irritable:ti,ab OR crohn*:ti,ab OR hiv:ti OR treatment:ti OR appendicitis:ti,ab OR esophag*:ti,ab OR surger*:ti,ab OR gastritis:ti,ab OR liver:ti,ab OR 'case report':ti OR 'case-report':ti OR outbreak*:ti OR travel*:ti OR therapy:ti OR 'conference abstract'/it)

*Refer to Appendix 1 for all search strings used



KEY VARIABLE DEFINITIONS

AGE GROUP

Older children and adolescents:

Range: 5-20 years old

Younger adults:

Range: 15-50 years old

Older adults:

Range: 50 years and older

Adults, broad ages:

Range: spans younger and older adults

Broad ages:

Range: spans child and adult ages

DIARRHEA

- WHO definition: ≥3 loose stools within 24 hours
- Non-WHO definition: other definitions or no definitions

ROTAVIRUS VACCINATION AVAILABLE

Rotavirus vaccine recommended as part of routine childhood vaccination in national guidelines, at/before start of study

OTHER DEFINITIONS

WHO Regions: 2019 definitions

Income Regions: World Bank 2019



INVERSE VARIANCE WEIGHTING AND RANDOM EFFECTS USED FOR META-ANALYSIS

KEY STEPS

Calculated 95% CI for point prevalences

Used metaprop function in 'meta' package (Schwarzer 2007) in R for analysis

Generated outcomes for:

- Primary: Age groups
- Secondary: WHO regions, income regions, study settings, diarrhea definitions, time, laboratory diagnostic method
- Tertiary: Secondary variables by age



Weighted by inverse variance Stronger method than weighting by sample size alone



Used arc sin transformationStandard process to stabilize variance



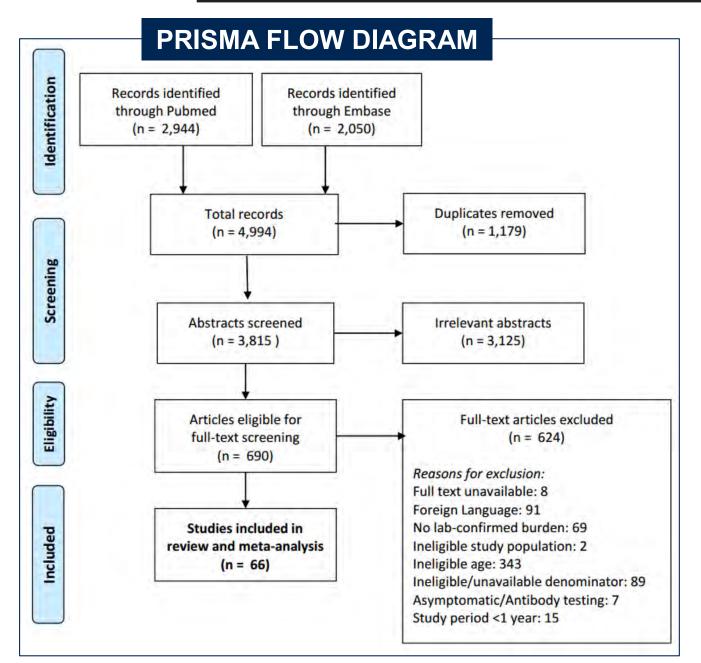
Modeled with random effects
Allows true effects to vary study
to study

Outcomes: pooled prevalence, 95% confidence intervals, heterogeneity estimates (I²), and prediction intervals

RESULTS: Studies Included in Review



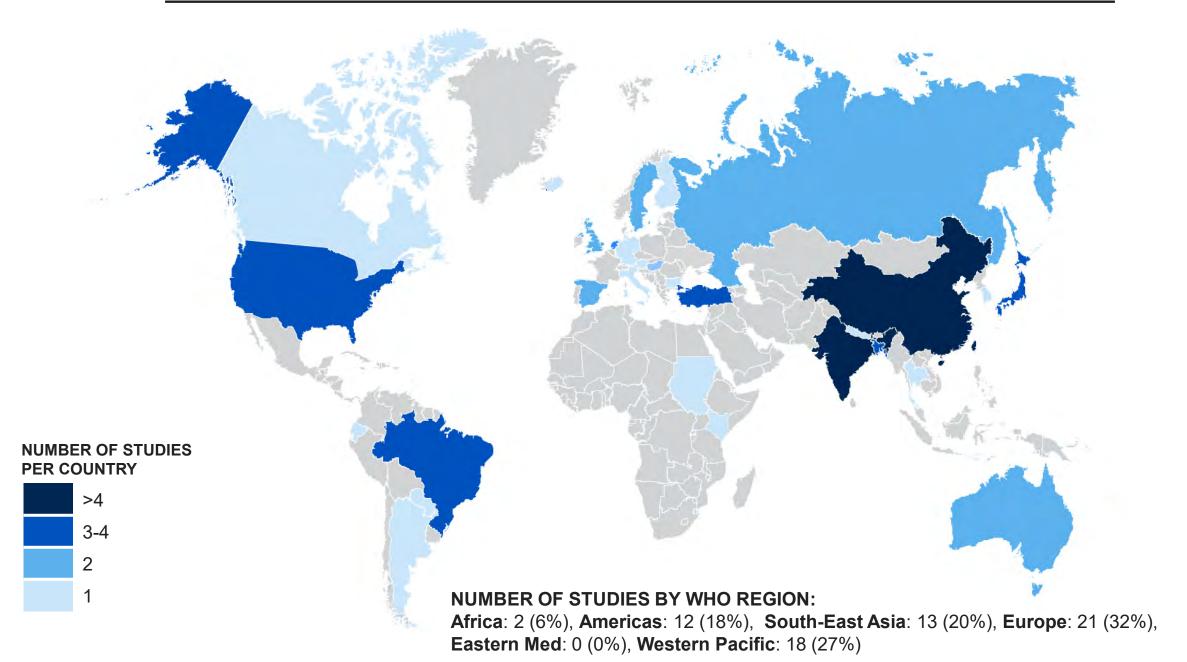
66 STUDIES INCLUDED IN ANALYSIS



NUMBER OF ARTICLES

- 4,994 abstracts identified
- 3,815 abstracts screened
- 690 articles reviewed
- 66 articles included

STUDIES IDENTIFIED FROM 32 COUNTRIES



WIDE VARIETY OF STUDIES INCLUDED

SUMMARY OF INCLUDED STUDIES (n=66)

STUDY CHARACTERISTIC	n (%)		
Rotavirus vaccine available	3 (4.5%)		
WHO definition of diarrhea	24 (36%)		
Income region			
Low	2 (2%)		
Lower-middle	13 (20%)		
Upper-middle	26 (39%)		
High	25 (38%)		
Study setting			
Community	7 (10%)		
Hospital – in-patient	20 (29%)		
Hospital – out-patient	6 (9%)		
Hospital – general	35 (51%)		

STUDY CHARACTERISTIC	n (%)		
Laboratory method			
ELISA	35 (53%)		
PCR	20 (30%)		
Electron Microscopy	3 (5%)		
Multiple	11 (17%)		
Study Period			
Before 2000	4 (6%)		
2000 to 2009	18 (27%)		
After 2009	44 (66%)		

SIZE OF STUDIES

(No. symptomatic individuals)

- Median: 371
- IQR: 211 to 1,000
- Range: 101 to 287,724

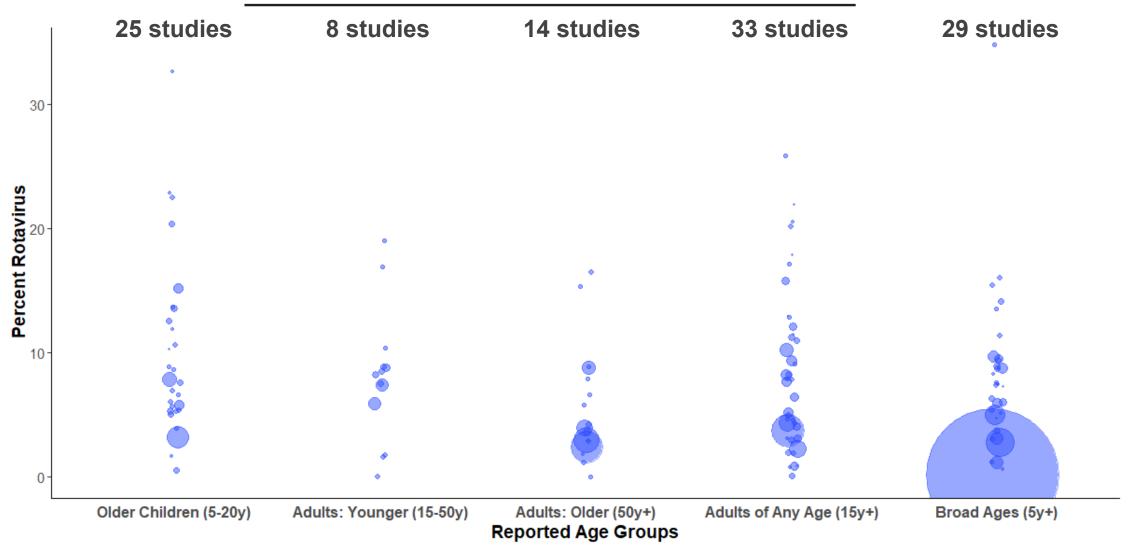


RESULTS:

Rotavirus Prevalence Among People ≥5 Years Old with Diarrhea



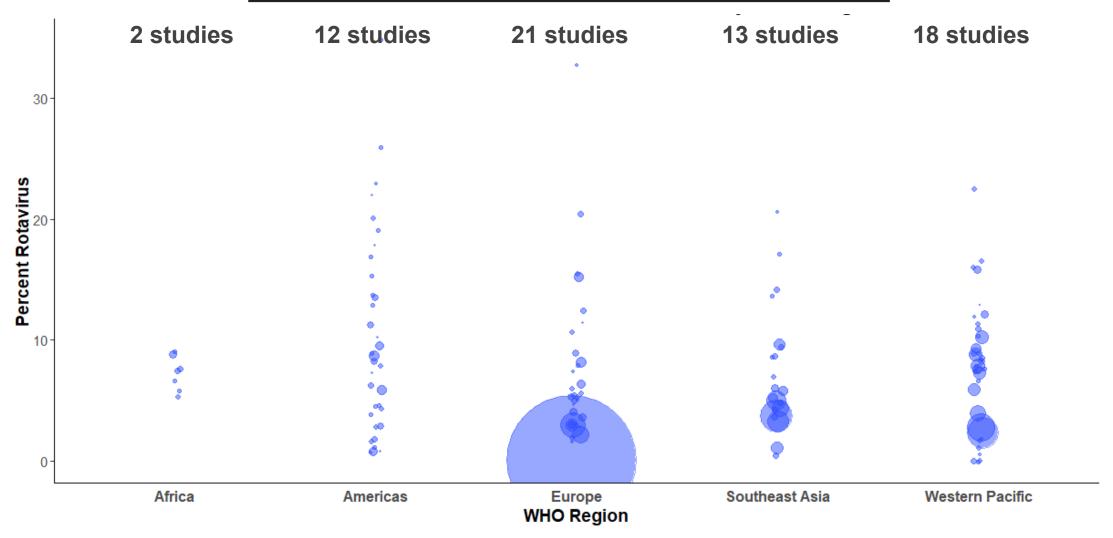
PERCENT OF DIARRHEA CASES DUE TO ROTAVIRUS BY AGE GROUP



1 circle per data point. Circle size corresponds to sample size (range: 100-200,000+).



PERCENT OF DIARRHEA CASES DUE TO ROTAVIRUS BY WHO REGION



1 circle per data point. Circle size corresponds to sample size (range: 100-200,000+).



META-ANALYSIS RESULTS: EXAMPLE OUTPUT

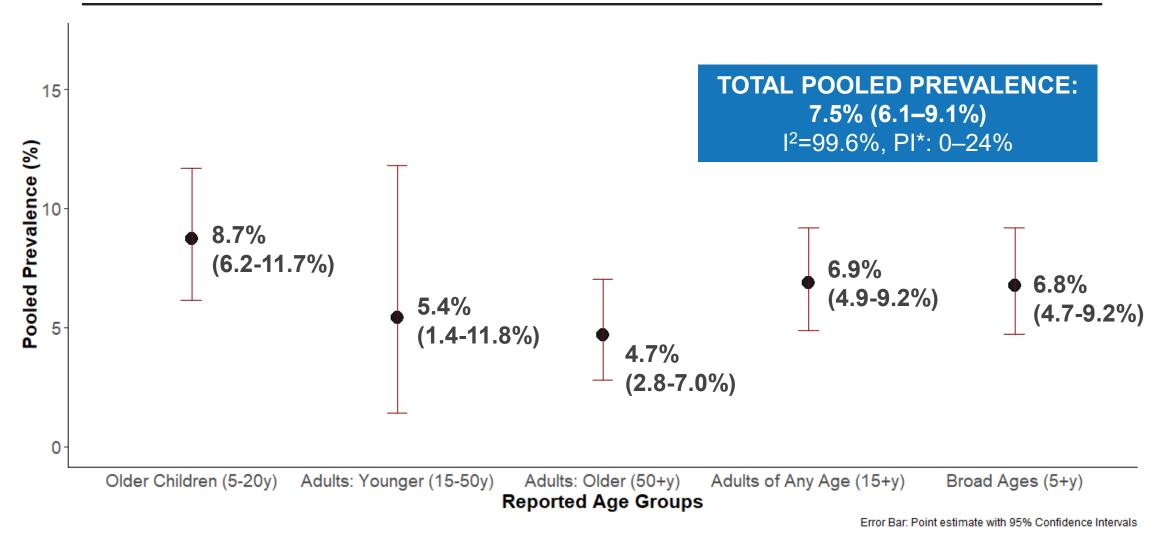
ESTIMATED PREVALENCE OF ROTAVIRUS AMONG OLDER ADULTS (≥50 Y.O.)

Study (Age Range)	Cases Der	nominator	Rotavirus Prevalence	Point Prev	95% CI	Weight	
Fletcher 2015 (50-100) Zhu 2013 (50-100) Cheun 2010 (50-100) Grytdal 2016 (65-100) Andersson 2017 (70-100) de Wit 2001 (60-100) Fernández 2010 (65-99) Zhang 2017 (65-100)	3 371 7 269 3 30 149	461 165 15394 251 9276 102 828 3857		0.03 0.03 0.03 0.04	[0.02; 0.03] [0.01; 0.06] [0.03; 0.03] [0.01; 0.09]	5.8% 7.6%	
Faruque 2009 (60-100) Breiman 2014 (50-100) Gong 2018 (60-100) Carvalho-Costa 2011 (60-100) Wang 2007 (50-100) Amarilla 2007 (57-100)	20 12 207	473 207 2345 179 659 170		0.04 0.06 0.09 0.09 0.11	[0.03; 0.07]	7.3% 6.7% 7.8% 6.6%	
Overall Effect Prediction Interval Heterogeneity: $I^2 = 96\%$, $\tau^2 = 0.0$	069, μ < 0.0	34367	0.05 0.1 0.15 0.2	0.05	[0.03; 0.07] [0.00; 0.16]	100.0%	

Forest plots generated for all analyses are available in appendix



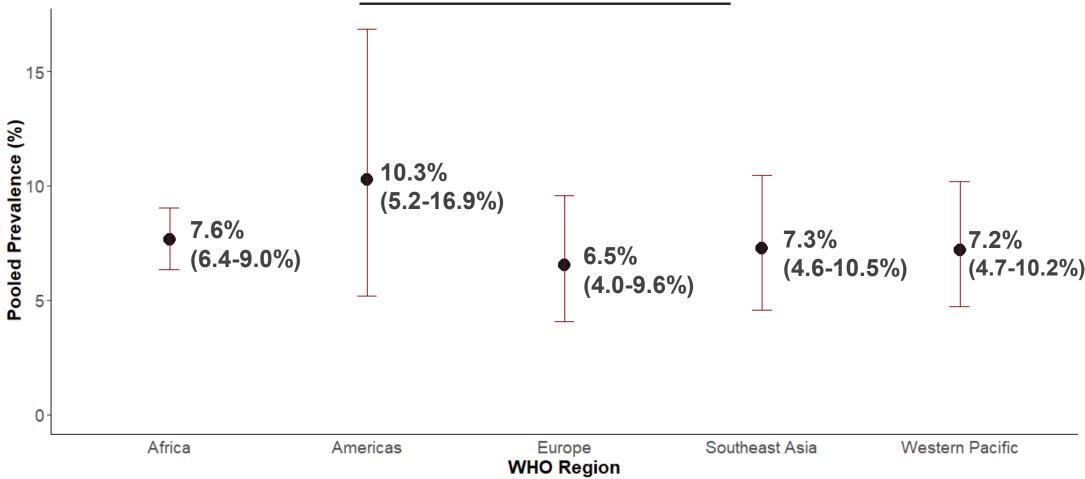
ESTIMATED ROTAVIRUS PREVALENCE BY AGE



Overall prevalence similar among all age groups



ESTIMATED ROTAVIRUS PREVALENCE BY WHO REGION

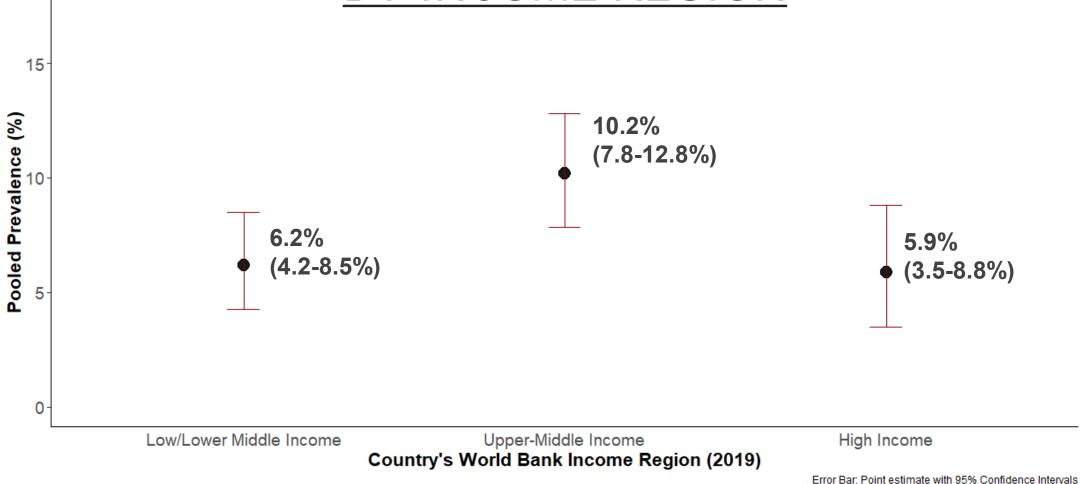


Error Bar: Point estimate with 95% Confidence Intervals

Similar rotavirus prevalence across all regions with available data



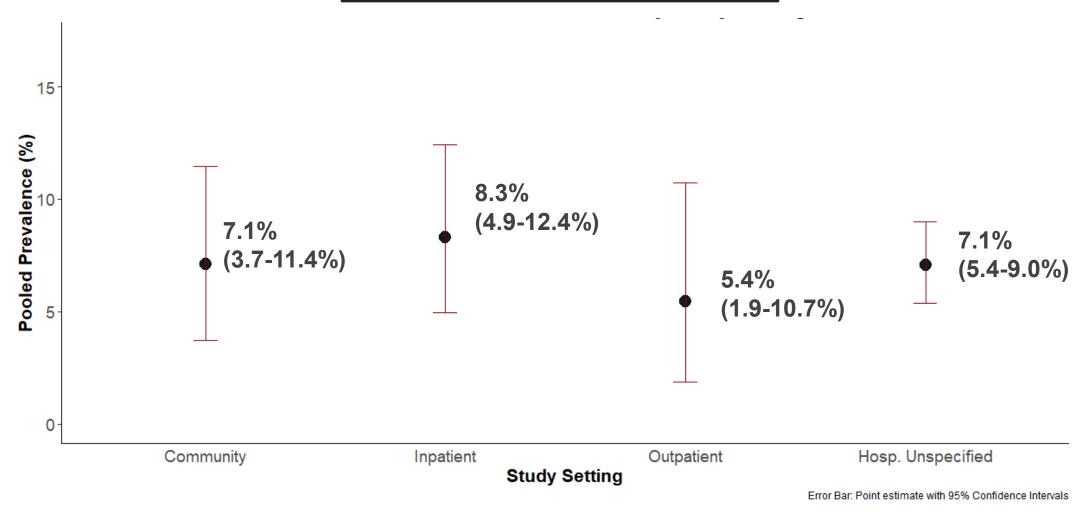
ESTIMATED ROTAVIRUS PREVALENCE BY INCOME REGION



Similar rotavirus prevalence across income regions



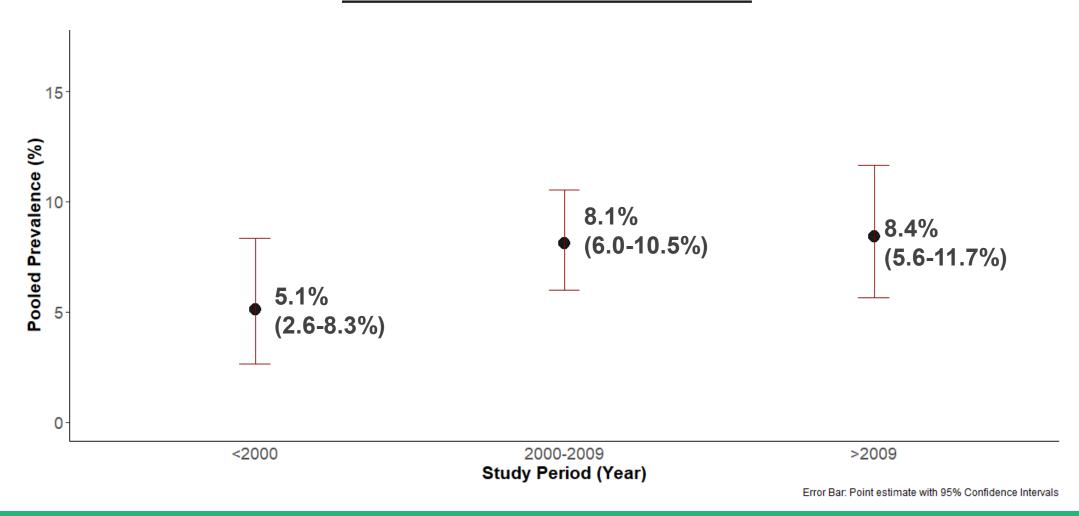
ESTIMATED ROTAVIRUS PREVALENCE BY STUDY SETTING



Similar prevalence by study setting



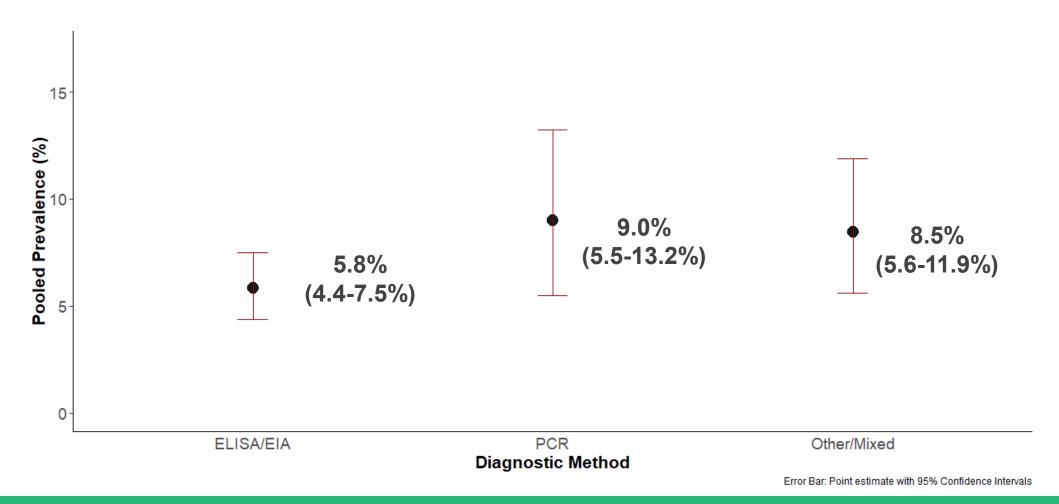
ESTIMATED ROTAVIRUS PREVALENCE BY STUDY PERIOD



Similar prevalence across time periods



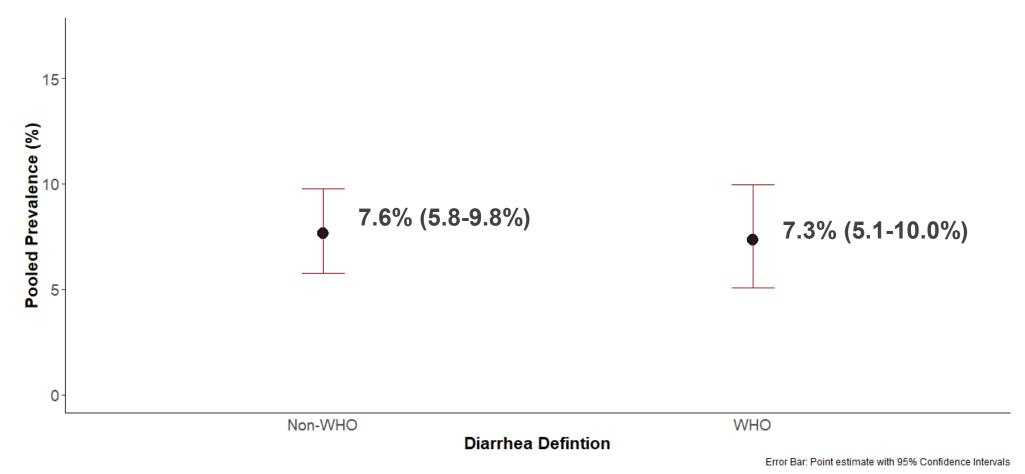
ESTIMATED ROTAVIRUS PREVALENCE BY DIAGNOSTIC METHOD



Similar prevalence across diagnostic methods



ESTIMATED ROTAVIRUS PREVALENCE BY STUDY DIARRHEA DEFINITION



Inclusion of studies with non-standardized definition for diarrhea does not alter results



DISCUSSION



SYNTHESIS OF FINDINGS

- Qualitatively, rotavirus prevalence among those with diarrhea appears lower in older children and adults than in children under 5
 - 2 Similar mean prevalence across variables analyzed
 - 3 Paucity of data from lower income settings
 - 4 Large heterogeneity observed and unexplained by analysis
- Wide variation in reported prevalence yields broad prediction intervals



RIGOROUS META-ANALYSIS CONDUCTED DESPITE LIMITATIONS WITH AVAILABLE DATA

STRENGTHS

- Systematic literature review
- Wide time range covered (1990–2019)
- Large number of studies included in review
- Weighted studies by inverse variance
- Disaggregated by several factors

LIMITATIONS

- Few studies from lower-income regions limit understanding of global burden
- Reporting by age difficult due to variations in age categories studies used
- Unstable estimates for extreme values
- No assessment of study quality
- Conditional prevalence cannot speak to overall burden of rotavirus



STUDY HIGHLIGHTS: PREVALENCE OF ROTAVIRUS AMONG PEOPLE 5 YEARS AND OLDER WITH DIARRHEA

FINDINGS

- Estimated mean rotavirus prevalence in older children and adults with diarrhea is 7.5% (95% CI: 6.1–9.1%).
- Generally no differences observed across geography, study design, or time, with similarly wide variation in disaggregated analyses
- Cautious interpretation necessary due to large heterogeneity of data



WHAT THIS STUDY ADDS

- First known meta-analysis of rotavirus burden among older children and adults
- Summaries rotavirus prevalence in populations ≥5 years old globally by age group, geography, and study type



REMAINING QUESTIONS

- What drives the heterogeneity observed between studies?
- How do these estimates of prevalence compare to other global estimates?
- How does prevalence change with rollout of rotavirus vaccine?



NEXT STEPS



FINALIZE DELIVERABLE AND DEVELOP MANUSCRIPT



DELIVERABLE REVIEW

- Review workbook and appendices
- Discuss any preferred adjustments



PROJECT CLOSE-OUT

- Shareability of results
- Timeline of feedback and official close-out



MANUSCRIPT DEVELOPMENT

- Expectations and involvement
- Preferred timeline



THANK YOU

Questions?

Please contact the START Center: start@uw.edu



APPENDICES

Appendix 1: Search strings

Appendix 2: Distribution of studies among older adults

Appendix 3: Pooled prevalence estimates: key variables by age

Appendix 4: Primary forest plots: age groups

Appendix 5: Secondary forest plots: other key variables

Appendix 6: Tertiary forest plots: key variables by age



Appendix 1. Search Strings

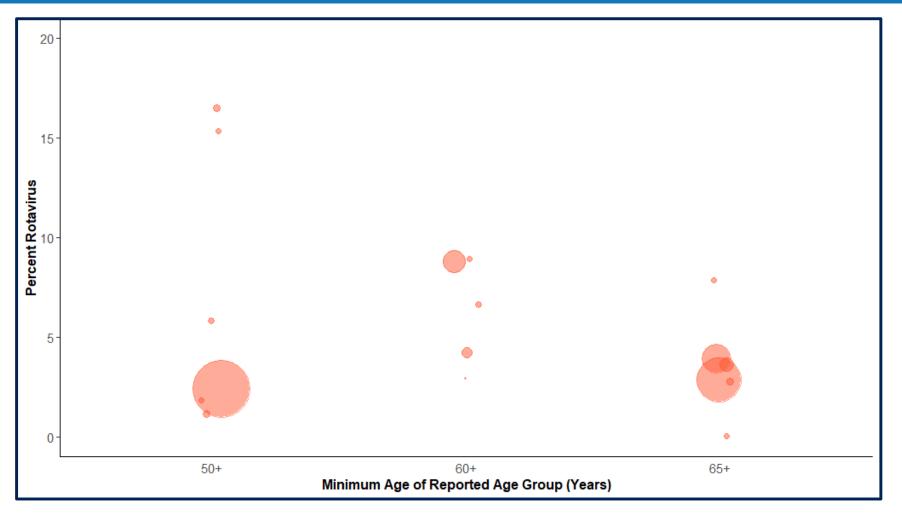
PubMed

Embase

('rotavirus'/exp OR 'rotavirus' OR 'human rotavirus'/exp OR 'human rotavirus' OR 'rotavirus infection' OR rotavirus:ti,ab OR rotaviruses:ti,ab) AND ('prevalence'/exp OR 'mortality'/exp OR burden:ti OR etiology:ti OR aetiology:ti OR mortality:ti OR death:ti OR deaths:ti OR fatal:ti OR fatality:ti OR epidemiology:ti) AND [1990-3000]/py AND [humans]/lim NOT ('colitis':ti,ab OR enterocolitis:ti,ab OR 'inflammatory bowel':ti,ab OR irritable:ti,ab OR crohn*:ti,ab OR hiv:ti OR treatment:ti OR appendicitis:ti,ab OR esophag*:ti,ab OR surger*:ti,ab OR gastritis:ti,ab OR liver:ti,ab OR 'case report':ti OR 'case-report':ti OR outbreak*:ti OR travel*:ti OR therapy:ti OR 'conference abstract'/it)

Appendix 2: Distribution of Studies for Older Adults

Data-driven approach used to determine cut-off for "older adults" category. A minimum age range of 50 was chosen due to similarities amongst data in the 50+, 60+, and 65+ groups, along with the limited number of studies reporting on this age group



Each circle represents one datapoint. Circle size corresponds to study size (range: 100-200,000+).

Appendix 3: Pooled Prevalence Estimates Disaggregated by Age and Key Variables

Key Variables:

WHO Region

Income Region

Study Setting

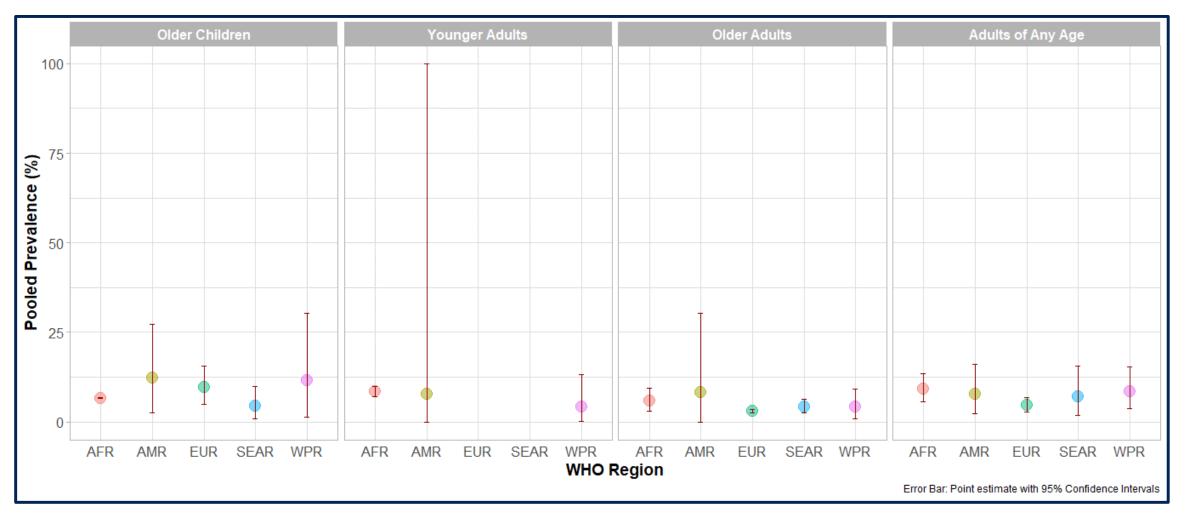
Study Period

Diarrhea Definition



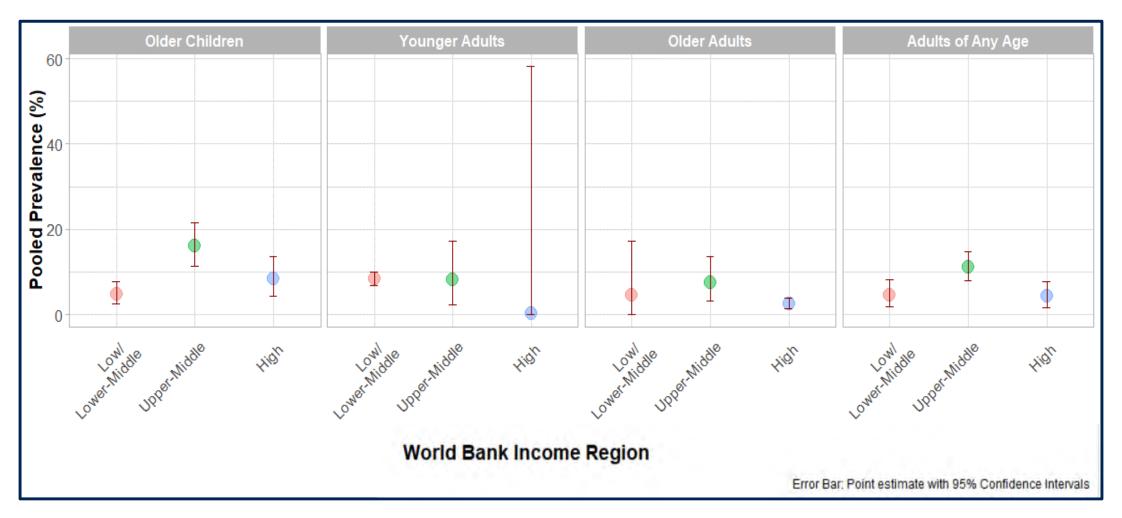
Estimated Rotavirus Prevalence by Age Group and WHO Region

Take-Away: No differences noted between WHO regions for each age group



Estimated Rotavirus Prevalence by Age Group and Income Region

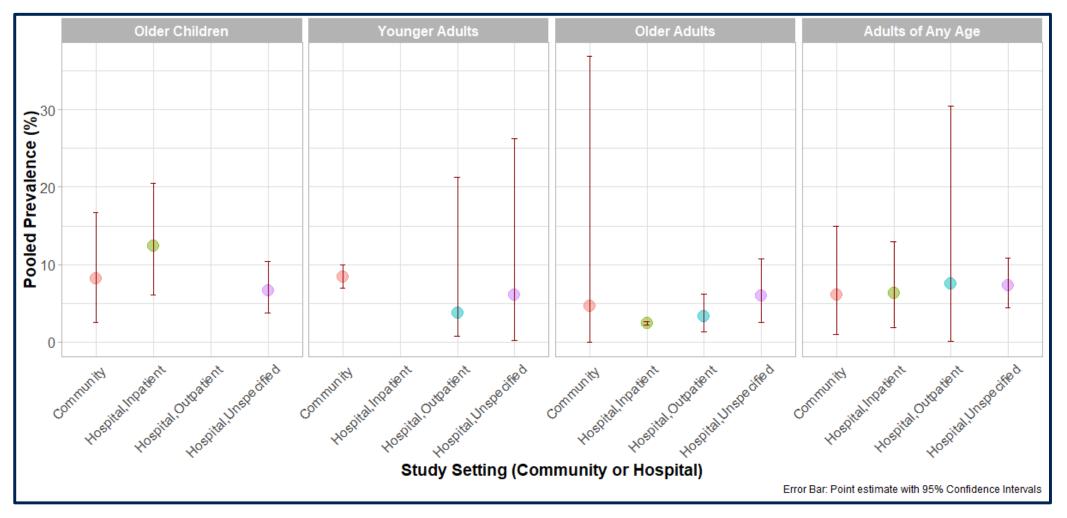
Take-Away: Similar patterns between income region observed for each age group





Estimated Rotavirus Prevalence by Age Group and Study Setting

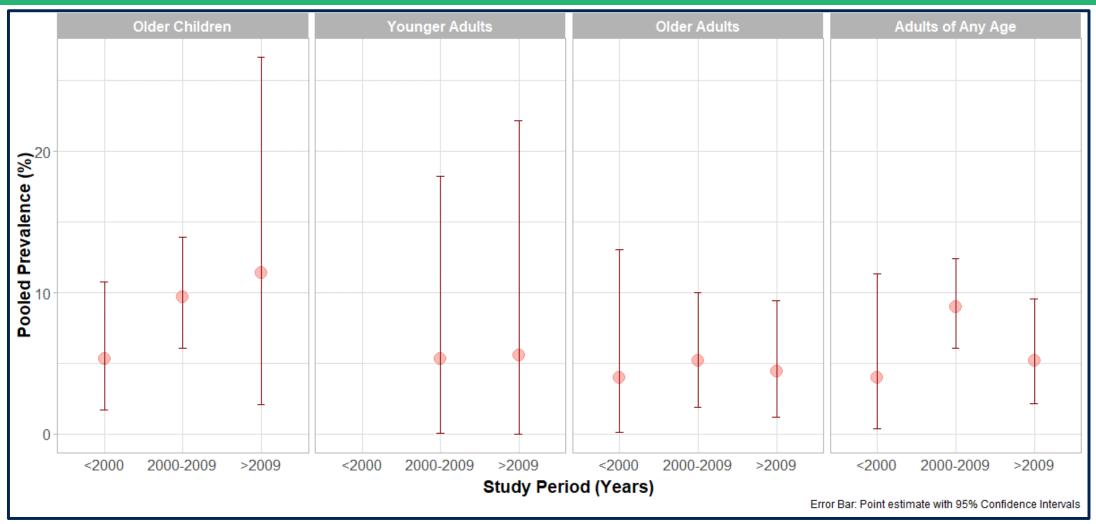
Take-Away: No differences noted between age groups and study setting





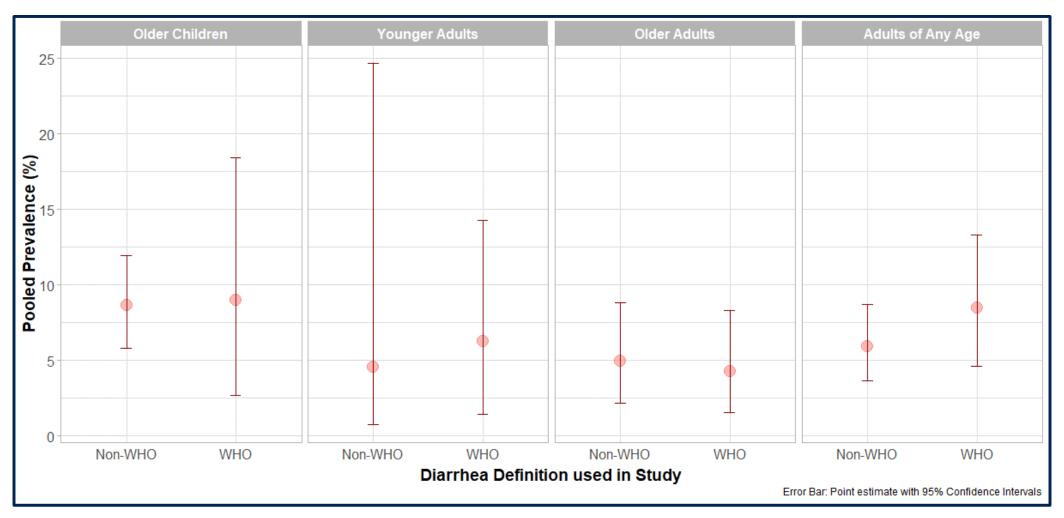
Estimated Rotavirus Prevalence by Age Group and Study Time Period

Take-Away: No difference noted in prevalence by age group and study period



Estimated Rotavirus Prevalence by Age Group and Diarrhea Definition

Take-Away: No difference noted in prevalence by age group and diarrhea definition





Appendix 4: Primary Forest Plots

Pooled Prevalence by:

Age Group



Forest Plot: Older Children and Adolescents (5-20 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight	
Bingnan 1991 (5-10)	2.00	419	4	0.00	[0.00; 0.02]	4.1%	
de Wit 2001 (5-11)	2.00	128	-		[0.00; 0.06]		
	218.00	6859	,el		[0.03; 0.04]		
Steenland 2013 (5-17)	9.00	231	-	0.04		3.9%	
Fernández 2010 (6-15)	23.00	461	-	0.05	[0.03; 0.08]	4.1%	
Bányai 2003 (5-14)	16.00	304	-		[0.03; 0.09]	4.0%	
Andersson 2017 (6-10)	30.00	566			[0.04; 0.08]	4.1%	
Grassi 2008 (5-16)	16.00	284	4	0.06	A CONTRACTOR OF THE PARTY OF TH		
Faruque 2009 (5-14)	70.00	1197		0.06	[0.05: 0.07]	4.2%	
Sethi 2001 (5-15)	19.00	319	-		[0.04: 0.09]	4.0%	
Elhag 2013 (5-14)	12.00	182	-		[0.04; 0.12]		
Breiman 2014 (5-17)	44.00	664		0.07		4.1%	
Uchida 2006 (5-14)	18.00	260	-	0.07	[0.04; 0.11]		
	233.00	2979	-		[0.07; 0.09]		
Tatte 2010 (10-18)	15.00	174	-		[0.05; 0.14]		
Fletcher 2015 (5-12)	15.00	168		0.09			
Unal 2016 (7-10)	26.00	246		0.11		3.9%	
Isabel 2018 (5-19)	35.00	284	-	0.12	[0.09; 0.17]		
Hacımustafaoğlu 2011 (5-14)	46.00	368	-		[0.09: 0.16]		
Carvalho-Costa 2011 (5-12)	65.00	483	-	0.13		4.1%	
	188.00	1235			[0.13; 0.17]	4.2%	
Wang 2007 (6-19)	85.00	440	-	0.19	[0.16; 0.23]		
Podkolzin 2009 (5-14)	73.44	360			[0.16; 0.25]		
Hasing 2009 (5-20)	30.00	131	-		[0.16: 0.31]	3.7%	
Hemming-Harlo 2016 (5-15)	49.00	150	-		[0.25; 0.41]	3.8%	
Overall Effect		18892		0.09	[0.06; 0.12]	100.0%	
Prediction Interval					[0.00; 0.27]	Care 12 70	
Heterogeneity: $I^2 = 96\%$, $\tau^2 = 0.0$	134, p <	0.01			0.1.5.4.77.6		
ATTENDED OF STREET OF	3.14	M.C.	0.1 0.2 0.3 0.4	1			
			est over and on				

Forest Plot: Younger Adults (15-50 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	ce Point Prev	95% CI	Weight
Fletcher 2015 (25-49)	0	287	(t-	0.00	[0.00; 0.02]	12.3%
Grytdal 2016 (26-45)	4	250	-	0.02	[0.01; 0.04]	12.2%
Zhu 2013 (20-49)	6	348		0.02	[0.01; 0.04]	12.4%
Gong 2018 (18-44)	276	4173		0.07	[0.06; 0.07]	12.9%
Breiman 2014 (18-49)	106	1.261	*	0.08	[0.07; 0.10]	12.8%
Wang 2007 (20-49)	117	1378	-	0.08	[0.07; 0.10]	12.8%
Jia 2016 (18-40)	22	211	-	0.10	[0.07; 0.16]	12.1%
Amarilla 2007 (18-37)	77	430		0.18	[0.14, 0.22]	12.5%
Overall Effect		8338	-	0.05	[0.01; 0.12]	100.0%
Prediction Interval Heterogeneity: /2 = 96%	$\tau^2 = 0.0$	0185. p < 0.01	I I I I I I I	5	[0.00; 0.31]	
Company of the Company of the Company		James Come Program	0 0.05 0.15 0.25			

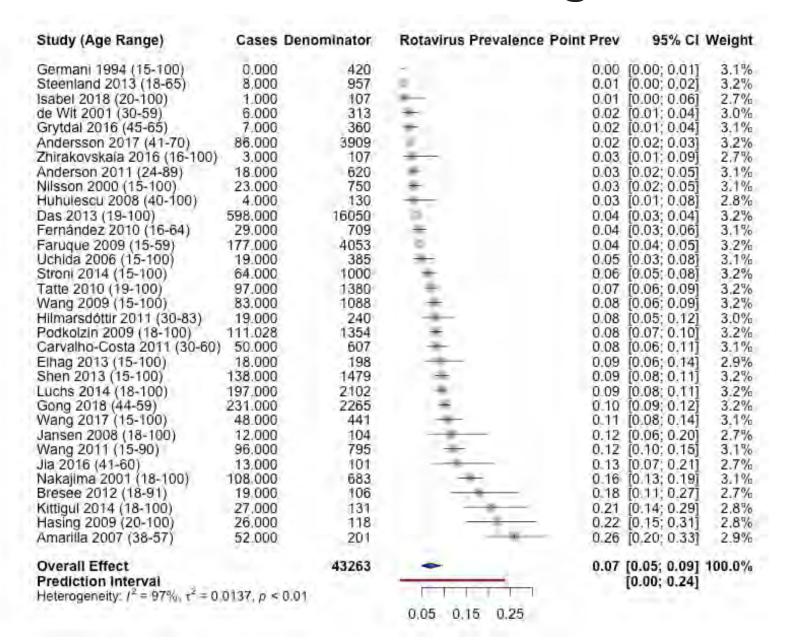


Forest Plot: Older Adults (50-100 y.o.)

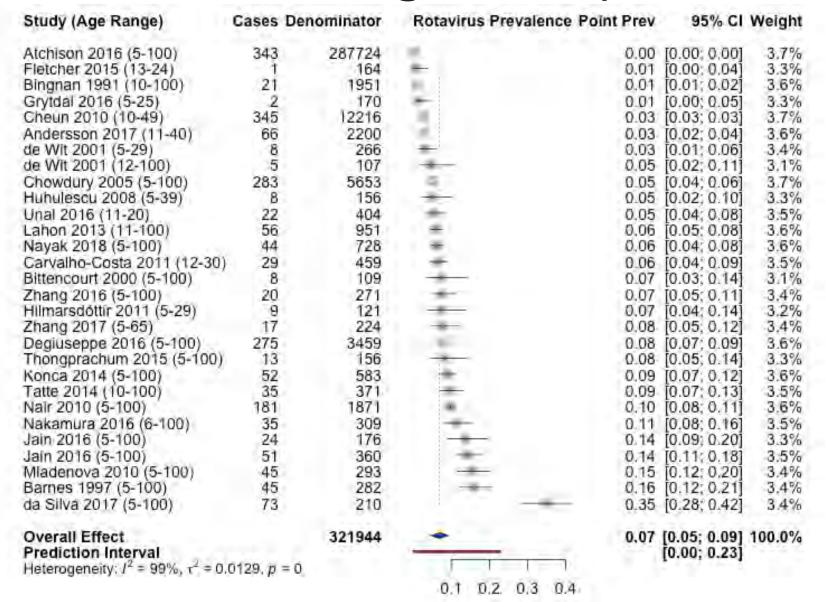
Study (Age Range)	Cases I	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight
Fletcher 2015 (50-100)	3	461		0.01	[0.00: 0.02]	7.3%
Zhu 2013 (50-100)	3	165	-		[0.00: 0.06]	6.5%
Cheun 2010 (50-100)	371	15394	W		[0.02; 0.03]	
Grytdal 2016 (65-100)	7	251	-		[0.01; 0.06]	
Andersson 2017 (70-100)	269	9276	-		[0.03: 0.03]	
de Wit 2001 (60-100)	3	102	-	0.03	[0.01: 0.09]	5.8%
Fernández 2010 (65-99)	30	828	-		[0.02; 0.05]	7.6%
Zhang 2017 (65-100)	149	3857	-		[0.03; 0.05]	7.8%
Farugue 2009 (60-100)	20	473	-	0.04	[0.03; 0.07]	7.3%
Breiman 2014 (50-100)	12	207	-	0.06	[0.03; 0.10]	6.7%
Gong 2018 (60-100)	207	2345	-	0.09	[0.08: 0.10]	7.8%
Carvalho-Costa 2011 (60-100)	16	179		0.09	[0.05; 0.14]	6.6%
Wang 2007 (50-100)	73	659	-		[0.09; 0.14]	7.5%
Amarilla 2007 (57-100)	26	170		0.15	[0.10; 0.22]	6.5%
Overall Effect Prediction Interval	an de	34367		0.05	[0.03; 0.07] [0.00; 0.16]	100.0%
Heterogeneity: $I^2 = 96\%$, $\tau^2 = 0.0$	1008 b < r	AUT.				
			0.05 0.1 0.15 0.2			



Forest Plot: Broad Adult Ages (15-100 y.o.)



Forest Plot: Broad Age Groups (5-100 y.o.)



Appendix 5: Secondary Forest Plots

Pooled Prevalence by each level of the following variables:

WHO Region

Income Region

Study Setting

Laboratory Diagnostic Method

Study Period

Diarrhea Definition



WHO REGION: Africa - Total

Study (Age Range)	Cases Deno	minator	Rotavirus Prevalence Poi	int Prev	95% CI	Weight
Breiman 2014 (5-100) Elhag 2013 (5-100)	162 30	2132 380	_		[0.07; 0.09] [0.05; 0.11]	
Overall Effect Heterogeneity: I ² = 0%,	$\tau^2 = 0, \rho = 0.8$	2512		0.08	[0.06; 0.09]	100.0%
111111111111111111111111111111111111111	3. 3		0.06 0.08 0.10.11			



WHO REGION: The Americas - Total

Study (Age Range)	Cases De	nominator	Rotavirus Prevalence	Point Prev	95% CI	Weight	
Steenland 2013 (5-65)	17	1188	4		[0.01; 0.02]	8.5%	
Grytdal 2016 (5-100)	20	1031	7.1		[0.01; 0.03]	8.5%	
Anderson 2011 (24-89)	18	620			[0.02; 0.05]	8.4%	
Bittencourt 2000 (5-100)	8	109	-		[0.03; 0.14]	7.8%	
Degiuseppe 2016 (5-100)	275	3459			[0.07; 0.09]	8.6%	
Isabel 2018 (5-100)	36	391	*		[0.07; 0.13]		
Carvalho-Costa 2011 (5-100)		1728	-		[0.08; 0.11]	8.5%	
Luchs 2014 (18-100)	197	2102		0.09	[0.08; 0.11]	8.6%	
Bresee 2012 (18-91)	19	106		0.18	[0.11; 0.27]	7.8%	
Amarilla 2007 (18-100)	155	801		0.19	[0.17; 0.22]	8.5%	
Hasing 2009 (5-100)	56	249		0.22	[0.18; 0.28]	8.2%	
da Silva 2017 (5-100)	73	210	-	0.35	[0.28; 0.42]	8.2%	
Overall Effect		11994	-	0.10	[0.05; 0.17]	100.0%	
Prediction Interval Heterogeneity: $I^2 = 98\%$, $\tau^2 = 0$.	0225, p < 0	.01	i i i i i		[0.00; 0.39]		
-C-008-000-00-00-00-00-00-00-00-00-00-00			0 0.1 0.2 0.3 0.4	90			



WHO REGION: European Region - Total

Study (Age Range)	Cases I	Denominator	Rotavirus Prevalenc	e Point Prev	95% CI	Weight	
Atchison 2016 (5-100)	343	287724		0.00	[0.00; 0.00]	5.0%	
Banyai 2003 (5-100)	4	304		0.01	[0.00; 0.04]		
de Wit 2001 (5-100)	17	681	- E		[0.02; 0.04]		
Zhirakovskaja 2016 (16-100)	3	107	-	0.03			
Andersson 2017 (6-100)	451	15951	16.	0.03			
de Wit 2001 (5-100)	7	235	-	0.03			
Nilsson 2000 (15-100)	23	750		0.03		The second second	
Fernández 2010 (6-99)	82	1998			[0.03; 0.05]		
Huhulescu 2008 (5-100)	12	286	-	0.04			
Grassi 2008 (5-100)	16	284	-	0.06			
Sethi 2001 (5-15)	19	319	-	0.06	[0.04; 0.09]	4.7%	
Stroni 2014 (15-100)	64	1000		0.06	[0.05; 0.08]		
Unal 2016 (7-100)	48	650	-	0.07			
Hilmarsdottir 2011 (5-59)	28	361	-		[0.05; 0.11]		
Konca 2014 (5-100)	52	583	196	0.09			
Podkolzin 2009 (5-100)	184	1714		0.11	[0.09; 0.12]		
Jansen 2008 (18-100)	12	104	-		[0.06; 0.20]		
Hacımustafaoğlu 2011 (5-14)		368	-		[0.09; 0.16]		
Szücs 1999 (5-14)	188	1235		0.15			
Mladenova 2010 (5-100)	45	293			[0.12; 0.20]		
Hemming-Harlo 2016 (5-100)		150	-		[0.25; 0.41]		
Overall Effect Prediction Interval	OMO T	315097		0.07	[0.04; 0.10] [0.00; 0.24]	100.0%	
Heterogeneity: $I^2 = 99\%$, $\tau^2 = 0$.	0144, p =	Ų	60 00 000				
			0.1 0.2 0.3 0	1.4			



WHO REGION: Southeast Asia - Total

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight	
Bingnan 1991 (5-100) Das 2013 (5-100) Faruque 2009 (5-100) Chowdury 2005 (5-100) Uchida 2006 (5-100) Lahon 2013 (11-100) Nayak 2018 (5-100) Tatte 2010 (10-100) Tatte 2014 (10-100)	37 56 44 112 35	5723 5653 645 951 728 1554 371	The state of the s	0.04 0.05 0.05 0.06 0.06 0.07 0.09	[0.04; 0.08] [0.06; 0.09] [0.07; 0.13]	8.1% 8.1% 8.1% 7.7% 7.9% 7.8% 7.9% 7.5%	
Nair 2010 (5-100) Jain 2016 (5-100) Jain 2016 (5-100) Kittigul 2014 (18-100) Overall Effect Prediction Interval	181 24 51 27	1871 176 360 131 43442		0.14 0.14 0.21	[0.08; 0.11] [0.09; 0.20] [0.11; 0.18] [0.14; 0.29] [0.05; 0.10] [0.00; 0.22]	8.0% 6.9% 7.5% 6.6% 100.0%	
Heterogeneity: $I^2 = 97\%$,	r ² = 0.00	84, ρ < 0.01	0.050.10.150,20.25		[0.00, 0.22]		



WHO REGION: Western Pacific Region-Total

Study (Age Range)	Cases Denor	ninator	Rotavirus Prevalence	Point Prev	95% CI	Weight	
Germani 1994 (15-100) Zhu 2013 (20-100) Fletcher 2015 (5-100) Cheun 2010 (6-100) Zhang 2017 (65-100) Zhang 2016 (5-100) Zhang 2017 (5-65) Wang 2009 (15-100) Gong 2018 (18-100) Thongprachum 2015 (5-100) Shen 2013 (15-100) Wang 2017 (15-100) Wang 2017 (15-100) Wang 2016 (18-60) Nakamura 2016 (6-100) Wang 2011 (15-90) Nakajima 2001 (18-100)	0 9 19 949 149 20 17 83 714 13 138 48 275 35 35 96	420 513 1080 30589 3857 271 224 1088 8783 156 1479 441 2477 312 309 795 683		0.02 0.03 0.04 0.07 0.08 0.08 0.08 0.09 0.11 0.11 0.11 0.11	[0.03; 0.05] [0.05; 0.11] [0.05; 0.12] [0.06; 0.09] [0.08; 0.09] [0.05; 0.14] [0.08; 0.11] [0.08; 0.12] [0.08; 0.15] [0.08; 0.15] [0.10; 0.15] [0.10; 0.15] [0.10; 0.15]	5.6% 5.7% 5.8% 5.8% 5.3% 5.7% 5.7% 5.7% 5.5% 5.5% 5.6% 5.6%	
Barnes 1997 (5-100) Overall Effect Prediction Interval Heterogeneity: $I^2 = 98\%$, $\tau^2 = 0$.	45 0109, p < 0.01	282 53759		0.16	[0.12; 0.21] [0.05; 0.10] [0.00; 0.23]	5.4%	
The state of the s			0.05 0.1 0.15 0.2				



INCOME REGION: Low/Lower-Middle Income - Total

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight
Bingnan 1991 (5-100)	23		8.		[0.01; 0.01]	6.9%
Steenland 2013 (5-65)	17	1188	E		[0.01; 0.02]	
Das 2013 (5-100)	816		10.00		[0.03; 0.04]	7.0%
Farugue 2009 (5-100)	267	5723		0.05	[0.04; 0.05]	7.0%
Chowdury 2005 (5-100)	283	5653		0.05	[0.04; 0.06]	7.0%
Uchida 2006 (5-100)	37	645	-		[0.04; 0.08]	6.6%
Lahon 2013 (11-100)	56	951	-	0.06	[0.05: 0.08]	6.7%
Nayak 2018 (5-100)	44	728	100	0.06	[0.04; 0.08]	6.7%
Tatte 2010 (10-100)	112	1554		0.07	[0.06; 0.09]	6.9%
Breiman 2014 (5-100)	162	2132	-	0.08	[0.07; 0.09]	6.9%
Elhag 2013 (5-100)	30				[0.05; 0.11]	6.3%
Tatte 2014 (10-100)	35	371		0.09	[0.07; 0.13]	6.3%
Nair 2010 (5-100)	181	1871		0.10	[0.08; 0.11]	6.9%
Jain 2016 (5-100)	24	176		0.14	[0.09; 0.20]	5.7%
Jain 2016 (5-100)	51	360		0.14	[0.11; 0.18]	6.3%
Overall Effect		47011	-	0.06	[0.04; 0.08]	100.0%
Prediction Interval Heterogeneity: I ² = 97%;	$r^2 = 0.00$	060, p < 0.01	1 1 1		[0.01; 0.17]	
			0.05 0.1 0.15			
			Sans Sell Live			



INCOME REGION: Upper-Middle Income - Total

Study (Age Range)	Cases De	nominator	Rotavirus Prevalence	Point Prev	95% CI	Weight	
Zhu 2013 (20-100) Zhirakovskaia 2016 (16-100) Zhang 2017 (65-100) Stroni 2014 (15-100) Bittencourt 2000 (5-100) Zhang 2016 (5-100) Unal 2016 (7-100) Zhang 2017 (5-65) Wang 2009 (15-100) Degiuseppe 2016 (5-100) Gong 2018 (18-100) Konca 2014 (5-100) Carvalho-Costa 2011 (5-100) Shen 2013 (15-100) Luchs 2014 (18-100) Podkolzin 2009 (5-100) Wang 2017 (15-100) Wang 2017 (15-100) Wang 2016 (18-60) Wang 2011 (15-90) Hacimustafaoglu 2011 (5-14) Mladenova 2010 (5-100) Kittigul 2014 (18-100) Hasing 2009 (5-100)	9 3 149 64 8 20 48 17 83 275 714 52 160 138 197 184 48 275 35 96 46 45 157 56	513 107 3857 1000 109 271 650 224 1088 3459 8783 583 1728 1479 2102 1714 441 2477 312 795 368 293 801 131 249		0.03 0.04 0.06 0.07 0.07 0.08 0.08 0.08 0.09 0.09 0.09 0.11 0.11 0.11 0.11 0.12 0.12 0.12 0.15 0.19 0.21	[0.07, 0.12] [0.08, 0.11] [0.08, 0.11] [0.08, 0.11] [0.09, 0.12] [0.08, 0.14] [0.10, 0.12] [0.08, 0.15] [0.10, 0.15] [0.10, 0.20] [0.12, 0.20] [0.17, 0.22] [0.14, 0.29] [0.18, 0.28]	3.3% 4.1% 4.0% 3.3% 3.7% 3.9% 4.0% 4.1% 4.0% 4.0% 4.0% 4.0% 4.0% 4.0% 3.8% 4.0% 3.8% 4.0% 3.8% 4.0% 3.8% 4.0% 3.8% 4.0% 3.8% 4.0%	
da Silva 2017 (5-100) Overall Effect Prediction Interval Heterogeneity: $J^2 = 95\%$, $\tau^2 = 0.0$	73 0097, p < 0.	33744 01	0.1 0.2 0.3 0.4	0.10	[0.28; 0.42] [0.08; 0.13] [0.01; 0.26]		



INCOME REGION: High Income - Total

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight	
Germani 1994 (15-100)	0	420		0.00	[0.00; 0.01]	4.0%	
Atchison 2016 (5-100)	343				[0.00; 0.00]		
Banyai 2003 (5-100)	4	304	3 -	0.01			
Fletcher 2015 (5-100)	19	1080	8		[0.01; 0.03]		
Grytdal 2016 (5-100)	20	1031			[0.01; 0.03]		
de Wit 2001 (5-100)	17	681			[0.02; 0.04]		
Andersson 2017 (6-100)	451	15951	4		[0.03; 0.03]		
Anderson 2011 (24-89)	18		# ·		[0.02; 0.05]		
de Wit 2001 (5-100)	7	235	-		[0.01; 0.06]		
Nilsson 2000 (15-100)	23		(B)		[0.02; 0.05]		
Cheun 2010 (6-100)	949		400		[0.03; 0.03]		
Fernández 2010 (6-99)	82		0		[0.03; 0.05]		
Huhulescu 2008 (5-100)	12	286			[0.02; 0.07]		
Grassi 2008 (5-100)	16	284	*	0.06	[0.03; 0.09]		
Sethi 2001 (5-15)	19	319	- A	0.06			
Hilmarsdottir 2011 (5-59)	28		-	0.08			
Thongprachum 2015 (5-100)	13	156	-		[0.05; 0.14]		
Isabel 2018 (5-100)	36		-		[0.07; 0.13]		
Nakamura 2016 (6-100)	35		1-8-	0.11	[0.08; 0.16]		
Jansen 2008 (18-100)	12	104	-		[0.06; 0.20]		
Szücs 1999 (5-14)	188	1235	-		[0.13; 0.17]		
Nakajima 2001 (18-100)	108	683	-				
Barnes 1997 (5-100)	45	282		0.16			
Bresee 2012 (18-91)	19	106	-		[0.11; 0.27]		
Hemming-Harlo 2016 (5-100)	49	150	_		[0.25; 0.41]		
Overall Effect		346049	•	0.06	[0.04; 0.09]	100.0%	
Prediction Interval		4.00.07	-	100	[0.00; 0.25]		
Heterogeneity: $I^2 = 100\%$, $\tau^2 = 0$	0.0181. 4) = Q			The Contract		
The second secon	-		0 0.1 0.2 0.3 0.	4			



STUDY SETTING: Community - Total

Study (Age Range)	Cases	Denominator	Rotavirus F	revalence	Point Prev	95% CI	Weight
de Wit 2001 (5-100)	17	681			0.02	[0.02; 0.04]	11.5%
de Wit 2001 (5-100)	7	235	-			[0.01; 0.06]	
Huhulescu 2008 (5-100)	12	286	-			[0.02; 0.07]	10.9%
Sethi 2001 (5-15)	19	319	-		0.06	[0.04] 0.09]	11.0%
Breiman 2014 (5-100)	162	2132	-			[0.07; 0.09]	11.8%
Hilmarsdottir 2011 (5-59)	28	361	-			[0.05; 0.11]	11.1%
Elhag 2013 (5-100)	30	380				[0.05; 0.11]	
Isabel 2018 (5-100)	36	391	-			[0.07; 0.13]	11.2%
Hasing 2009 (5-100)	56	249		-		[0.18; 0.28]	10.7%
Overall Effect		5034	-		0.07	[0.04; 0.11]	100.0%
Prediction Interval Heterogeneity: $I^2 = 92\%$, τ^2	2 = 0.008	9. ō < 0.01	· In the			[0.00; 0.24]	
, .e.a.: a a a a a a a a a a a a a a a a a a		71 POSE-71	0.050.10.	150,20.25			



STUDY SETTING: Inpatient - Total

Study (Age Range)	Cases D	enominator	Rotavirus Prevalence	Point Prev	95% CI	Weight	
Atchison 2016 (5-100) Banyai 2003 (5-100) Steenland 2013 (5-65) Anderson 2011 (24-89) Nilsson 2000 (15-100) Cheun 2010 (6-100) Nayak 2018 (5-100) Stroni 2014 (15-100) Unal 2016 (7-100) Nair 2010 (5-100) Podkolzin 2009 (5-100) Jansen 2008 (18-100) Hacımustafaoğlu 2011 (5-14)	343 4 17 18 23 949 44 64 48 181 184 12 46	287724 304 1188 620 750 30589 728 1000 650 1871 1714 104 368	-	0.00 0.01 0.01 0.03 0.03 0.06 0.06 0.06 0.10 0.11 0.12 0.12	[0.00; 0.00] [0.00; 0.04] [0.01; 0.02] [0.02; 0.05] [0.02; 0.05] [0.03; 0.03] [0.04; 0.08] [0.05; 0.08] [0.06; 0.10] [0.08; 0.11] [0.09; 0.12] [0.06; 0.20] [0.09; 0.16]	5.4% 5.2% 5.4% 5.4% 5.4% 5.4% 5.4% 5.4% 5.4% 5.4	
Jain 2016 (5-100) Szücs 1999 (5-14) Mladenova 2010 (5-100) Barnes 1997 (5-100) Kittigul 2014 (18-100) Hemming-Harlo 2016 (5-100)	24 188 45 45 27 49	176 1235 293 282 131 150		0.15 0.15 0.16 0.21	[0.09; 0.20] [0.13; 0.17] [0.12; 0.20] [0.12; 0.21] [0.14; 0.29] [0.25; 0.41]	5.4% 5.2% 5.2% 5.0%	
Overall Effect Prediction Interval Heterogeneity: $I^2 = 100\%$, $\tau^2 = 0$	0.0191 p =	329877 0	0 0.1 0.2 0.3 0.4		[0.05; 0.12] [0.00; 0.31]		

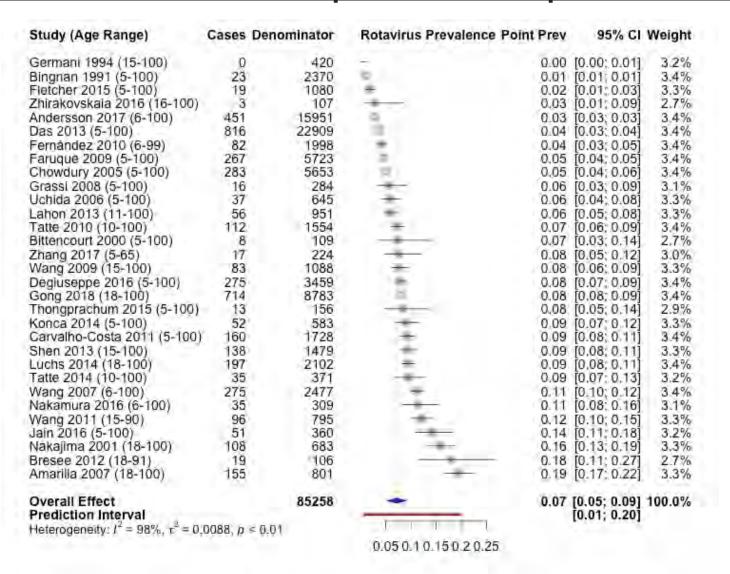


STUDY SETTING: Outpatient - Total

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence P	oint Prev	95% CI	Weight
Zhu 2013 (20-100) Grytdal 2016 (5-100) Zhang 2017 (65-100) Zhang 2016 (5-100) Wang 2017 (15-100)	9 20 149 20 48 35	513 1031 3857 271 441		0.02	[0.03; 0.05] [0.05; 0.11]	17.5% 15.9%
Jia 2016 (18-60) Overall Effect Prediction Interval Heterogeneity: I ² = 949		312 6425 .0083, p < 0.01	0 0.05 0.1 0.15 0.2	0.11	[0.08; 0.15] [0.02; 0.11] [0.00; 0.24]	16.1% 100.0%



STUDY SETTING: Hospital Unspecified - Total





LAB DIAGNOSIS: ELISA- Total

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight
Bingnan 1991 (5-100)	23	2370	6	0.01	[0.01; 0.01]	4.2%
Steenland 2013 (5-65)	17			0.01		4.1%
de Wit 2001 (5-100)	17	681	-		[0.02; 0.04]	
Anderson 2011 (24-89)	18		-	0.03		4.0%
de Wit 2001 (5-100)	7	235	-	0.03		3.6%
Cheun 2010 (6-100)	949	30589		0.03		4.3%
Das 2013 (5-100)	816		10.0		[0.03; 0.04]	4.3%
Zhang 2017 (65-100)	149			0.04		4.2%
Fernández 2010 (6-99)	-82			0.04	[0.03; 0.05]	4.2%
Huhulescu 2008 (5-100)	12			0.04	[0.02; 0.07]	3.7%
Faruque 2009 (5-100)	267	5723	-	0.05		4.2%
Chowdury 2005 (5-100)	283	5653		0.05	[0.04; 0.06]	4.2%
Uchida 2006 (5-100)	37	645	-8-	0.06	[0.04; 0.08]	4.0%
Sethi 2001 (5-15)	19	319	-	0.06	[0.04; 0.09]	3.8%
Nayak 2018 (5-100)	44	728	-	0.06	[0.04; 0.08]	4.0%
Tatte 2010 (10-100)	112	1554	-	0.07	[0.06; 0.09]	4.2%
Bittencourt 2000 (5-100)	8	109	_	0.07	[0.03; 0.14]	3.1%
Breiman 2014 (5-100)	162	2132	-	0.08	[0.07; 0.09]	4.2%
Konca 2014 (5-100)	52		-			4.0%
Shen 2013 (15-100)	138		-	0.09		4.2%
Tatte 2014 (10-100)	35		_	0.09	[0.07; 0.13]	3.9%
Jia 2016 (18-60)	35		-	0.11	[0.08; 0.15]	3.8%
Hacımustafaoğlu 2011 (5-14)	46		-		[0.09; 0.16]	3.9%
Mladenova 2010 (5-100)	45				[0.12; 0.20]	3.8%
Nakajima 2001 (18-100)	108	683	-	0.16	[0.13; 0.19]	4.0%
Overall Effect		85685	-	0.06	[0.04; 0.08]	100.0%
Prediction Interval		The second	· · · · · · · · · · · · · · · · · · ·		[0.01; 0.16]	
Heterogeneity: $I^2 = 96\%$, $\tau^2 = 0$.	0062, p	< 0.01				
			0.05 0.1 0.15 0.3	2		



LAB DIAGNOSIS: PCR- Total

Study (Age Range)	Cases D	Denominator	Rotavirus Prevalence F	Point Prev	95% CI	Weight
Zhu 2013 (20-100) Grytdal 2016 (5-100) Zhirakovskaia 2016 (16-100) Andersson 2017 (6-100) Stroni 2014 (15-100)	9 20 3 451 64	513 1031 107 15951 1000	*	0.02 0.03 0.03	[0.01; 0.03] [0.01; 0.03] [0.01; 0.09] [0.03; 0.03] [0.05; 0.08]	6.6% 5.8% 6.7%
Zhang 2016 (5-100) Zhang 2017 (5-65) Gong 2018 (18-100) Thongprachum 2015 (5-100) Podkolzin 2009 (5-100)	20 17 714 13 184	271 224 8783 156 1714	1	0.07 0.08 0.08	[0.05; 0.11] [0.05; 0.12] [0.08; 0.09] [0.05; 0.14]	6.3% 6.2% 6.7% 6.0% 6.6%
Nakamura 2016 (6-100) Jansen 2008 (18-100) Jain 2016 (5-100) Bresee 2012 (18-91) Kittigul 2014 (18-100) Hemming-Harlo 2016 (5-100)	35 12 24 19 27 49	309 104 176 106 131 150		0.14 0.18 0.21	[0.08; 0.16] [0.06; 0.20] [0.09; 0.20] [0.11; 0.27] [0.14; 0.29] [0.25; 0.41]	5.8% 6.1% 5.8% 5.9%
Overall Effect Prediction Interval Heterogeneity: $I^2 = 98\%$, $r^2 = 0$.		30726	0.1 0.2 0.3 0.4	Fee 7.0	[0.06; 0.13] [0.00; 0.30]	A



LAB DIAGNOSIS: Other/Mixed- Total

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence F	Point Prev	95% CI	Weight
Germani 1994 (15-100)	. 0	420		0.00	[0.00; 0.01]	4.0%
Atchison 2016 (5-100)	343			0.00	[0.00: 0.00]	4.1%
Bányai 2003 (5-100)	.4	304	÷	0.01	[0.00; 0.04]	3.9%
Fletcher 2015 (5-100)	19				[0.01; 0.03]	4.0%
Nilsson 2000 (15-100)	23	750			[0.02; 0.05]	4.0%
Grassi 2008 (5-100)	16	284	*	0.06	[0.03; 0.09]	3.9%
Lahon 2013 (11-100)	56	951		0.06	[0.05; 0.08]	4.0%
Unal 2016 (7-100)	48	650	*	0.07	[0.06; 0.10]	4.0%
Wang 2009 (15-100)	83	1088	4	0.08	[0.06; 0.09]	4.0%
Hilmarsdóttir 2011 (5-59)	28	361	*	0.08	[0.05: 0.11]	3.9%
Elhag 2013 (5-100)	30	380		0.08	[0.05; 0.11]	4.0%
Degiuseppe 2016 (5-100)	275	3459	W-	0.08	[0.07; 0.09]	4.1%
Isabel 2018 (5-100)	36	391	-	0.09	[0.07; 0.13]	4.0%
Carvalho-Costa 2011 (5-100) 160	1728	w	0.09	[0.08; 0.11]	4.1%
Luchs 2014 (18-100)	197	2102		0.09	[0.08; 0.11]	4.1%
Nair 2010 (5-100)	181	1871		0.10	[0.08, 0.11]	4.1%
Wang 2017 (15-100)	48	441	-	0.11	[0.08; 0.14]	4.0%
Wang 2007 (6-100)	275	2477		0.11	[0.10; 0.12]	4.1%
Wang 2011 (15-90)	96				[0.10; 0.15]	4.0%
Jain 2016 (5-100)	51		-8-		[0.11; 0.18]	3.9%
Szücs 1999 (5-14)	188			0.15	[0.13; 0.17]	4.1%
Barnes 1997 (5-100)	45		-	0.16	[0.12; 0.21]	3.9%
Amarilla 2007 (18-100)	155		-	0.19	[0.17; 0.22]	4.0%
Hasing 2009 (5-100)	56				[0.18; 0.28]	3.9%
da Silva 2017 (5-100)	73	210	-	0.35	[0.28: 0.42]	3.8%
Overall Effect		310393	-	0.08	[0.06; 0.12]	100.0%
Prediction Interval					[0.00; 0.30]	
Heterogeneity: $I^2 = 100\%$, $\tau^2 =$	0.0182, 4	0 = 0				
Activities and the second second			0.1 0.2 0.3 0.4			
			J. J. S. S. S. S. S.			



STUDY PERIOD: <2000- Total

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight
Germani 1994 (15-10	0) 0	420		0.00	[0.00; 0.01]	6.6%
Bingnan 1991 (5-100	23	2370	.0	0.01	[0.01; 0.01]	6.9%
Banyai 2003 (5-100)	4	304	-	0.01	[0.00; 0.04]	6.5%
de Wit 2001 (5-100)	17	681		0.02	[0.02; 0.04]	6.7%
de Wit 2001 (5-100)	7	235	(0.03	[0.01; 0.06]	6.4%
Nilsson 2000 (15-100	23	750		0.03	[0.02; 0.05]	6.8%
Faruque 2009 (5-100) 267	5723	20	0.05	[0.04; 0.05]	6.9%
Chowdury 2005 (5-10	00) 283	5653	20	0.05	[0.04; 0.06]	6.9%
Lahon 2013 (11-100)	56	951	-	0.06	[0.05; 0.08]	6.8%
Sethi 2001 (5-15)	19	319	-	0.06	[0.04, 0.09]	6.5%
Tatte 2010 (10-100)	112	1554		0.07	[0.06; 0.09]	6.9%
Bittencourt 2000 (5-1	80) 8	109		0.07	[0.03; 0.14]	5.9%
Szücs 1999 (5-14)	188	1235	-3-	0.15	[0.13; 0.17]	6.8%
Nakajima 2001 (18-1)	00) 108	683		0.16	[0.13; 0.19]	6.7%
Barnes 1997 (5-100)	45	282		0.16	[0.12; 0.21]	6.5%
Overall Effect		21269	-	0.05	[0.03; 0.08]	100.0%
Prediction Interval	4		•	-	[0.00; 0.22]	
Heterogeneity: /2 = 98%	$h_{\rm c} \tau^2 = 0.013$	3. p = 0.01				
	7		0 0.05 0.1 0.15 0.2			



STUDY PERIOD: 2000s- Total

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight	
Zhu 2013 (20-100)	9	513	-	0.02	[0.01; 0.03]	3.9%	
Fletcher 2015 (5-100)	19	1080	*	0.02	[0.01: 0.03]	4.0%	
Zhirakovskaja 2016 (16-100)	3	107		0.03	[0.01; 0.09]	3.3%	
Anderson 2011 (24-89)	18	620		0.03	[0.02; 0.05]	3.9%	
Cheun 2010 (6-100)	949	30589	- N	0.03	[0.03; 0.03]	4.1%	
Das 2013 (5-100)	816	22909		0.04	[0.03; 0.04]	4.1%	
Fernández 2010 (6-99)	82	1998		0.04	[0.03; 0.05]	4.0%	
Huhulescu 2008 (5-100)	12	286	-	0.04	[0.02; 0.07]	3.8%	
Grassi 2008 (5-100)	16	284	-	0.06	[0.03; 0.09]	3.8%	
Uchida 2006 (5-100)	37	645	*	0.06	[0.04; 0.08]	3.9%	
Breiman 2014 (5-100)	162	2132	*	80.0	[0.07; 0.09]	4.0%	
Wang 2009 (15-100)	83	1088	-	0.08	[0.06; 0.09]	4.0%	
Hilmarsdottir 2011 (5-59)	28	361		0.08	[0.05; 0.11]	3.8%	
Elhag 2013 (5-100)	30	380	*	80.0	[0.05; 0.11]	3.8%	
Carvalho-Costa 2011 (5-100)	160	1728		0.09	[0.08; 0.11]	4.0%	
Luchs 2014 (18-100)	197	2102	-	0.09	[0.08; 0.11]	4.0%	
Nair 2010 (5-100)	181	1871		0.10	[0.08; 0.11]	4.0%	
Padkolzin 2009 (5-100)	184	1714	-	0.11	[0.09; 0.12]	4.0%	
Wang 2007 (6-100)	275	2477		0.11	[0.10; 0.12]	4.0%	
Jansen 2008 (18-100)	12	104		0.12	[0.06; 0.20]	3.3%	
Wang 2011 (15-90)	96	795	-8-	0.12	[0.10; 0.15]	4.0%	
Mladenova 2010 (5-100)	45	293	-	0.15	[0.12; 0.20]	3.8%	
Bresee 2012 (18-91)	19	106		0.18	[0.11; 0.27]	3.3%	
Amarilla 2007 (18-100)	155	801	-	0.19	[0.17; 0.22]	4.0%	
Kittigul 2014 (18-100)	27	131	-		[0.14; 0.29]		
Hasing 2009 (5-100)	56	249	-9-	0.22	[0.18; 0.28]	3.7%	
Overall Effect		75363	-	0.08	[0.06; 0.11]	100.0%	
Prediction Interval			-		[0.01; 0.23]		
Heterogeneity: $f^2 = 98\%$, $\tau^2 = 0$.	0099. p	0.01	0.05 0.1 0.15 0.2 0.25		***********		

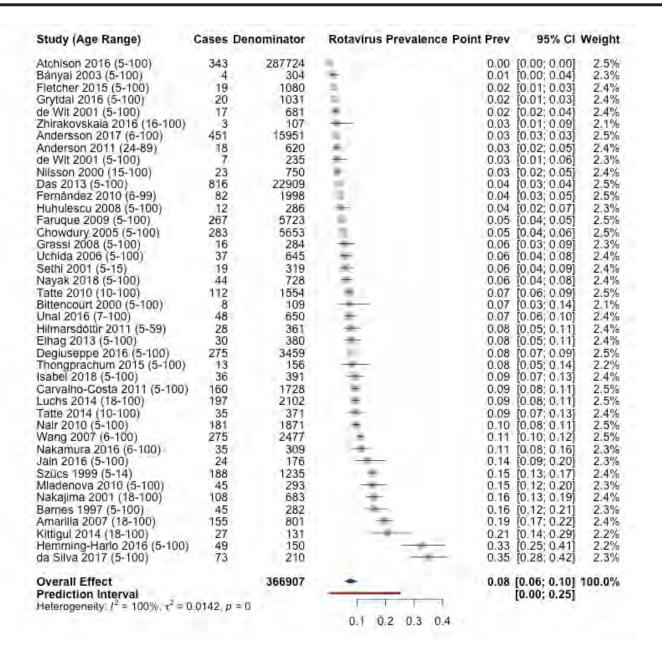


STUDY PERIOD: >2009- Total

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight	
Atchison 2016 (5-100)	343	287724	9	0.00	[0.00; 0.00]	4.3%	
Steenland 2013 (5-65)	17	1188	1.	0.01	[0.01; 0.02]	4.3%	
Grytdal 2016 (5-100)	20	1031	.63.	0.02	[0.01; 0.03]	4.3%	
Andersson 2017 (6-100)	451	15951		0.03	[0.03; 0.03]	4.3%	
Zhang 2017 (65-100)	149	3857	19.	0.04	[0.03; 0.05]	4.3%	
Nayak 2018 (5-100)	44	728	- 10	0.06	[0.04; 0.08]	4.2%	
Stroni 2014 (15-100)	64	1000	-	0.06	[0.05; 0.08]	4.3%	
Zhang 2016 (5-100)	20	271	-	0.07	[0.05; 0.11]	4.1%	
Unal 2016 (7-100)	48	650		0.07	[0.06; 0.10]	4.2%	
Zhang 2017 (5-65)	17	224	-	0.08	[0.05; 0.12]	4.0%	
Degiuseppe 2016 (5-100)	275	3459	i i	0.08	[0.07; 0.09]	4.3%	
Gong 2018 (18-100)	714	8783	30	0.08	[0.08; 0.09]	4.3%	
Thongprachum 2015 (5-100)	13	156		0.08	[0.05; 0.14]	3.9%	
Konca 2014 (5-100)	52	583	-	0.09	[0.07; 0.12]	4.2%	
Isabel 2018 (5-100)	36	391	-	0.09	[0.07; 0.13]	4.2%	
Shen 2013 (15-100)	138	1479		0.09	[0.08; 0.11]	4.3%	
Tatte 2014 (10-100)	35	371	-	0.09	[0.07; 0.13]	4.1%	
Wang 2017 (15-100)	48	441	-	0.11	[0.08; 0.14]	4.2%	
Jia 2016 (18-60)	35	312	-	0.11	[0.08; 0.15]	4.1%	
Nakamura 2016 (6-100)	35	309		0.11	[0.08; 0.16]	4.1%	
Jain 2016 (5-100)	24	176	-	0.14	[0.09; 0.20]	4.0%	
Jain 2016 (5-100)	51	360	-	0.14	[0.11; 0.18]	4.1%	
Hemming-Harlo 2016 (5-100)	49	150	-	0.33	[0.25; 0.41]	3.9%	
da Silva 2017 (5-100)	73	210		0.35	[0.28; 0.42]	4.0%	
Overall Effect		329804	-	0.08	[0.06; 0.12]	100.0%	
Prediction Interval					[0.00; 0.28]		
Hoterogeneity: $I^2 = 100\%$, $\epsilon^2 = 0$	0.0159, p	= 0	0.1 0.2 0.3 0	0.4	arteria Tiple		



DIARRHEA DEFINITION: Non-WHO-Total



DIARRHEA DEFINITION: WHO - Total

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight
Germani 1994 (15-100)	0	420	q :	0.00	[0.00: 0.01]	4.2%
Bingnan 1991 (5-100)	23	2370	- 64	0.01	[0.01; 0.01]	4.3%
Steenland 2013 (5-65)	17	1188		0.01	[0.01; 0.02]	4.3%
Zhu 2013 (20-100)	.9	513	-	0.02	[0.01; 0.03]	4.2%
Cheun 2010 (6-100)	949	30589		0.03	[0.03; 0.03]	4.4%
Zhang 2017 (65-100)	149	3857		0.04	[0.03: 0.05]	4.3%
Lahon 2013 (11-100)	56	951	*	0.06	[0.05; 0.08]	4.3%
Stroni 2014 (15-100)	64	1000	*	0.06	[0.05; 0.08]	4.3%
Zhang 2016 (5-100)	20	271	-	0.07	[0.05; 0.11]	4.0%
Zhang 2017 (5-65)	17	224	-	0.08	[0.05; 0.12]	4.0%
Breiman 2014 (5-100)	162				[0.07; 0.09]	4.3%
Wang 2009 (15-100)	83	1088			[0.06; 0.09]	4.3%
Gong 2018 (18-100)	714	8783		0.08	[0.08; 0.09]	4.4%
Konca 2014 (5-100)	52		-	0.09		4.2%
Shen 2013 (15-100)	138		- 	0.09	the contract of the contract o	4.3%
Podkolzin 2009 (5-100)	184	1714		0.11	[0.09; 0.12]	4.3%
Wang 2017 (15-100)	48	441	-	0.11	[0.08; 0.14]	4.2%
Jia 2016 (18-60)	35		-	0.11		4.1%
Jansen 2008 (18-100)	12				[0.06; 0.20]	3.6%
Wang 2011 (15-90)	96		-	0.12		4.2%
Hacımustafaoğlu 2011 (5-14)	46				[0.09; 0.16]	4.1%
Jain 2016 (5-100)	51	360			[0.11; 0.18]	4.1%
Bresee 2012 (18-91)	19	106			[0.11; 0.27]	3.6%
Hasing 2009 (5-100)	56	249	-	0.22	[0.18; 0.28]	4.0%
Overall Effect		59897	-	0.07	[0.05; 0.10]	100.0%
Prediction Interval					[0.00; 0.23]	
Heterogeneity: $I^2 = 98\%$, $\tau^2 = 0$.0118. p	< 0.01	the land of the land			
			0.050.10.150.20.25			



Appendix 6: Tertiary Forest Plots

Pooled Prevalence by Age and:

Appendix 6A: WHO Region

Appendix 6B: Income Region

Appendix 6C: Study Setting

Appendix 6D: Study Period

6E: Diarrhea Definition



Appendix 6A: WHO Regions by Age

African Region by Age Groups

American Region by Age Groups

European Region by Age Groups

Southeast Asian Region by Age Groups

Western Pacific Region by Age Groups



African Region by Age Group



AFR: Older Children and Adolescents (5-20 y.o.)

Study (Age Range)	Cases Denomi	nator	Rotavirus Prevalence	Point Prev	95% CI	Weight
Elhag 2013 (5-14) Breiman 2014 (5-17)	12 44	182 664			[0.04; 0.12] [0.05; 0.09]	The second secon
Overall Effect Heterogeneity: /2 = 0%	$a_{L}\tau^{2} = 0, \rho = 0.99$	846	0.04 0.06 0.08 0.1	0.07	[0.06; 0.07]	100.0%



AFR: Younger Adults (15-50 y.o.)

 Study (Age Range)
 Cases Denominator
 Rotavirus Prevalence Proportion
 95%-CI

 Breiman 2014 (18-49)
 106
 1261
 0.07
 0.08
 0.09
 0.1



AFR: Older Adults (50-100 y.o.)

 Study (Age Range)
 Cases Denominator
 Rotavirus Prevalence Proportion
 95%-CI

 Breiman 2014 (50-100)
 12
 207
 0.06 [0.03; 0.1]

 0.04 0.06 0.08 0.1
 0.08 0.1



AFR: Broad Adult Ages (15-100 y.o.)

 Study (Age Range)
 Cases Denominator
 Rotavirus Prevalence Proportion
 95%-CI

 Elhag 2013 (15-100)
 18
 198
 0.09 [0.06; 0.14]

 0.06 0.08 0.1 0.12 0.14
 0.01 0.12 0.14



AFR: Broad Ages (5-100 y.o.)

No data reported

The American Region by Age Group



AMR: Older Children and Adolescents (5-20 y.o.)

Study (Age Range)	Cases Denom	Inator	Rotavirus Prevalence Poin	t Prev	95% CI	Weight	
Steenland 2013 (5-17) Isabel 2018 (5-19) Carvalho-Costa 2011 (5-12) Hasing 2009 (5-20)	9 35 65 30	231 284 483 131	+	0.12	[0.02; 0.08] [0.09; 0.17] [0.11; 0.17] [0.16; 0.31]	25.3% 26.0%	
Overall Effect Prediction Interval Heterogeneity: I ² = 91%, τ ² = 0	0.0138, p < 0.01	1129	0 0.1 0.2 0.3 0.4 0.5 0.6	0.12	[0.03; 0.27] [0.00; 0.64]	100.0%	



AMR: Younger Adults (15-50 y.o.)

Study (Age Range)	Cases Den	ominator	Rotaviru	s Prevalence	Point Prev	95% CI	Weight	
Grytdal 2016 (26-45) Amarilla 2007 (18-37)	77	250 430	-	-		[0.01; 0.04] [0.14; 0.22]		
Overall Effect Heterogeneity: I ² = 98%	/ ₆ , τ ² = 0.0473,	680 p < 0.01		1	0.00	[0.00; 1.00]	100.0%	
			0.05	01 015 02				



AMR: Older Adults (50-100 y.o.)

Study (Age Range)	Cases Denor	ninator	Rotavirus Prevalence F	Point Prev	95% CI	Weight
Grytdal 2016 (65-100) Carvalho-Costa 2011 (60-100) Amarilla 2007 (57-100)	7 16 26	251 179 170		0.09	[0.01; 0.06] [0.05; 0.14] [0.10; 0.22]	34.0% 33.1% 32.9%
Overall Effect Prediction Interval Heterogeneity: $I^2 = 91\%$, $\tau^2 = 0.0$	126, p < 0.01	600	0 0.2 0.4 0.6 0.8 1	0.08	[0.00; 0.30] [0.00; 1.00]	The second of the second of the second



AMR: Broad Adult Ages (15-100 y.o.)

Study (Age Range)	Cases Deno	minator	Rotavirus Prevalence F	Point Prev	95% CI	Weight
Steenland 2013 (18-65) Isabel 2018 (20-100) Grytdal 2016 (45-65) Anderson 2011 (24-89) Carvalho-Costa 2011 (30-60) Luchs 2014 (18-100) Bresee 2012 (18-91) Hasing 2009 (20-100) Amarilla 2007 (38-57)	8 1 7 18 50 197 19 26 52	957 107 360 620 607 2102 106 118 201		0.01 0.02 0.03 0.08 0.09 0.18 0.22	[0.00; 0.02] [0.00; 0.06] [0.01; 0.04] [0.02; 0.05] [0.06; 0.11] [0.08; 0.11] [0.11; 0.27] [0.15; 0.31] [0.20; 0.33]	11.4% 10.6% 11.3% 11.4% 11.4% 11.5% 10.6% 10.7% 11.0%
Overall Effect Prediction Interval Heterogeneity: $I^2 = 97\%$, $\tau^2 = 0$.	0278, p < 0.01	5178	0 0.1 0.2 0.3 0.4		[0.02; 0.16] [0.00; 0.41]	100.0%



AMR: Broad Ages (5-100 y.o.)

Study (Age Range)	Cases	Denominator	Rotavi	rus Prevalence	Point Prev	95% CI	Weight	
Grytdal 2016 (5-25) Carvalho-Costa 2011 (12-30) Bittencourt 2000 (5-100) Degluseppe 2016 (5-100) da Silva 2017 (5-100)	29 8 275 73	109 3459	-		0.07 0.08	[0.00; 0.05] [0.04; 0.09] [0.03; 0.14] [0.07; 0.09] [0.28; 0.42]	20.3% 19.4% 20.6%	
Overall Effect Prediction Interval Heterogeneity: $I^2 = 97\%$, $\tau^2 = 0$,	0358, p	4407 < 0.01	0.0.10.	20,30.40.50.6	0.09	[0.01; 0.27] [0.00; 0.68]	100.0%	



European Region by Age Group



EUR: Older Children and Adolescents (5-20 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight
de Wit 2001 (5-11)	2.00		+		[0.00; 0.06]	8.6%
Fernández 2010 (6-15) Bányai 2003 (5-14)	23.00	461 304	2		[0.03; 0.08]	9.3%
Andersson 2017 (6-10)	30.00	566	- -		[0.04; 0.08]	9.3%
Grassi 2008 (5-16)	16.00	284	-		[0.03; 0.09]	9.1%
Sethi 2001 (5-15) Unal 2016 (7-10)	19.00 26.00	319 246	-		[0.04; 0.09]	9.1%
Hacimustafaoğlu 2011 (5-14)		368			[0.09; 0.16]	9.2%
Szücs 1999 (5-14)	188.00	1235	*		[0.13; 0.17]	9.4%
Podkolzin 2009 (5-14) Hemming-Harlo 2016 (5-15)	73.44 49.00	360 150			[0.16; 0.25] [0.25; 0.41]	9.2% 8.7%
Overall Effect Prediction Interval Heterogeneity: $I^2 = 95\%$, $\tau^2 = 0$.0174. p	4421 < 0.01	-	0.10	[0.05; 0.16] [0.00; 0.35]	100.0%
			0.1 0.2 0.3 0.	4		



EUR: Younger Adults (15-50 y.o.)

No data reported



EUR: Older Adults (50-100 y.o.)

Study (Age Range)	Cases Den	ominator	Rotavirus Prevalen	ce Point Prev	95% CI	Weight
Andersson 2017 (70-100) de Wit 2001 (60-100) Fernandez 2010 (65-99)	269 3 30	9276 102 828	*	0.03	[0.03; 0.03] [0.01; 0.09] [0.02; 0.05]	90.9% 1.0% 8.1%
Overall Effect Prediction Interval Heterogeneity: /2 = 0%, τ2 =	Q, μ = 0.53	10206	0.02 0.04 0.06 0.0		[0.02; 0.04] [0.02; 0.05]	100.0%



EUR: Broad Adult Ages (15-100 y.o.)

Study (Age Range)	Cases Der	nominator	Rotavirus Prevalence F	oint Prev	95% CI	Weight	
de Wil 2001 (30-59)	6.000	313	-		THE RESERVE OF THE PARTY OF THE	10.1%	
Andersson 2017 (41-70)	86.000	3909		0.02	[0.02; 0.03]	12.0%	
Zhirakovskaja 2016 (16-100)	3.000	107	-2	0.03	[0.01; 0.09]	7.5%	
Nilsson 2000 (15-100)	23.000	750	-	0.03	[0.02; 0.05]	11.2%	
Huhulescu 2008 (40-100)	4.000	130			0.01; 0.08		
Femandez 2010 (16-64)	29.000	709			[0.03; 0.06]	11.1%	
Stroni 2014 (15-100)	64.000	1000		7000 0 0	THE COURT OF STREET STREET, ST	11.4%	
Hilmarsdöttir 2011 (30-83)	19.000	240	-		0.05; 0.12		
	111.028	1354	-		[0.07; 0.10]		
Jansen 2008 (18-100)	12.000	104			[0.06: 0.20]	7.5%	
Overall Effect Prediction Interval		8616			[0.03; 0.07] [0.00; 0.13]	100.0%	
Heterogeneity: $l^2 = 93\%$, $\tau^2 = 0$.	0.038, p < 0.0	t	- 0		45345		
PROPERTY OF STREET			0.05 0.1 0.15				



EUR: Broad Ages (5-100 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight
Atchison 2016 (5-100)	343	287724	in .	0.00	[0.00; 0.00]	12.2%
Andersson 2017 (11-40)	66	2200	*	0.03	[0.02; 0.04]	12.0%
de Wit 2001 (5-29)	8	266		0.03	[0.01; 0.06]	11.1%
de Wit 2001 (12-100)	5	107	-	0.05	[0.02: 0.11]	9.8%
Huhulescu 2008 (5-39)	5 8	156		0.05	[0.02: 0.10]	10.5%
Unal 2016 (11-20)		404			[0.04; 0.08]	11.5%
Hilmarsdóttir 2011 (5-29)	22 9	121	S		[0.04: 0.14]	10.1%
Konca 2014 (5-100)	52	583			[0.07: 0.12]	11.7%
Mladenova 2010 (5-100)	45	293	-		[0.12; 0.20]	11.2%
Overall Effect		291854	-	0.05	[0.02; 0.09]	100.0%
Prediction Interval Heterogeneity: I ² = 99%, τ ²	= 0.009	8. a < 0.01	1 1 1 1 1		[0.00; 0.21]	
	-1.41	e cu como	0 0.05 0.1 0.15 0.2	2		



Southeast Asian Region by Age Group



SEAR: Older Children and Adolescents (5-20 y.o.)

Study (Age Range)	Cases Denon	ninator	Rotavirus Prevalence Po	int Prev	95% CI
Bingnan 1991 (5-10) Das 2013 (5-19) Faruque 2009 (5-14) Uchida 2006 (5-14) Tatte 2010 (10-18)	2 218 70 18 15	419 6859 1197 260 174		0.03 0.06 0.07	[0.05; 0.07]
Overall Effect Prediction Interval Heterogeneity: /2 = 93%	, τ ² = 0.0074, μ	8909 7 < 0.01	0.005.01.015.02	0.04	[0.01; 0.10] [0.00; 0.24]



Weight

20.0% 21.6% 21.1% 19.2% 18.2%

100.0%

SEAR: Younger Adults (15-50 y.o.)

No data reported



SEAR: Older Adults (50-100 y.o.)

Study (Age Range)	Cases D	enominator	Rotavirus Pro	evalence	Proportion	95%-CI
Faruque 2009 (60-100)	20	473			0.04	[0.03; 0.07]
			0.03 0.04 0.0	05 0.06		

SEAR: Broad Adult Ages (15-100 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence Po	int Prev	95% CI	Weight
Das 2013 (19-100) Faruque 2009 (15-59) Uchida 2006 (15-100) Tatte 2010 (19-100) Kittigul 2014 (18-100)	598 177 19 97 27	16050 4053 385 1380 131		0.04 0.05	[0.03; 0.04] [0.04; 0.05] [0.03; 0.08] [0.06; 0.09] [0.14; 0.29]	20.8% 19.8% 20.6%
Overall Effect Prediction Interval Heterogeneity: /2 = 94%	$ au^{2} = 0.0$	21999 3115, ρ < 0.01	0.0,05 0.15 0.25 0.35	0.07	[0.02; 0.15] [0.00; 0.36]	100.0%



SEAR: Broad Ages (5-100 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence Po	int Prev	95% CI	Weight	
Bingnan 1991 (10-100) Chowdury 2005 (5-100) Lahon 2013 (11-100) Nayak 2018 (5-100)	21 283 56 44	1951 5653 951 728		0.05 0.06 0.06	[0.01; 0.02] [0.04; 0.06] [0.05; 0.08] [0.04; 0.08]	13.0% 13.1% 12.8% 12.6%	
Tatte 2014 (10-100) Nair 2010 (5-100) Jain 2016 (5-100) Jain 2016 (5-100)	35 181 24 51	371 1871 176 360		0.10 0.14	[0.07; 0.13] [0.08; 0.11] [0.09; 0.20] [0.11; 0.18]	12.2% 13.0% 11.2% 12.1%	
Overall Effect Prediction Interval Heterogeneity: I ² = 97%, τ	² = 0.00	12061 80, ρ < 0.01	0.05 0.1 0.15 0.2	0.07	[0.04; 0.12] [0.00; 0.24]	100.0%	



Western Pacific Region by Age Group



WPR: Older Children and Adolescents (5-20 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight
Cheun 2010 (6-9) Fletcher 2015 (5-12) Wang 2007 (6-19)	233 15 85	2979 168 440	-	0.09	[0.07; 0.09] [0.05; 0.15] [0.16; 0.23]	30.6%
Overall Effect Prediction Interval Heterogeneity: $I^2 = 96$	%, τ ² = 0.	3587 .0083, ρ < 0.01	0.020406081	0.12	[0.01; 0.30] [0.00; 1.00]	100.0%



WPR: Younger Adults (15-50 y.o.)

Study (Age Range)	Cases Der	nominator	Rotavirus Prevalence	Point Prev	95% CI	Weight
Fletcher 2015 (25-49) Zhu 2013 (20-49) Gong 2018 (18-44) Wang 2007 (20-49)	0 6 276 117	287 348 4173 1378		0.02 0.07	[0.00; 0.02] [0.01; 0.04] [0.06; 0.07] [0.07; 0.10]	19.7% 19.9% 20.6% 20.5%
Jia 2016 (18-40) Overall Effect Prediction Interval Heterogeneity: 12 = 96%	22 0. v ² = 0.0177	211 6397 7, p ≤ 0.01			[0.07; 0.16] [0.00; 0.13] [0.00; 0.38]	19.4%
0.00.00.00.00.00.00.00.00.00.00.00.00.0			00.05 0.15 0.25 0.35	ž.		



WPR: Older Adults (50-100 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence Poi	nt Prev	95% CI	Weight	
Fletcher 2015 (50-100) Zhu 2013 (50-100) Cheun 2010 (50-100) Zhang 2017 (65-100) Gong 2018 (60-100) Wang 2007 (50-100)	3 371 149 207 73	461 165 15394 3857 2345 659		0.02 0.04 0.09	[0.00; 0.02] [0.00; 0.06] [0.02; 0.03] [0.03; 0.05] [0.08; 0.10] [0.09; 0.14]	16.5% 15.0% 17.4% 17.3% 17.2% 16.7%	
Overall Effect Prediction Interval Heterogeneity: $I^2 = 98\%$.	r ² = 0.00	22881 96, p < 0.01	0 0.05 0.1 0.15 0.2	0.04	[0.01; 0.09] [0.00; 0.23]	100.0%	



WPR: Broad Adult Ages (15-100 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight	
Germani 1994 (15-100) Wang 2009 (15-100) Shen 2013 (15-100) Gong 2018 (44-59) Wang 2017 (15-100) Wang 2011 (15-90) Jia 2016 (41-60) Nakajima 2001 (18-100)	0 83 138 231 48 96 13	2265 441 795 101		0.08 0.09 0.10 0.11 0.12 0.13	[0.00; 0.01] [0.06; 0.09] [0.08; 0.11] [0.09; 0.12] [0.08; 0.14] [0.10; 0.15] [0.07; 0.21] [0.13; 0.19]	12.9% 12.5% 12.7% 11.2%	
Overall Effect Prediction Interval Heterogeneity: $I^2 = 97\%$, r	² = 0.01	7272 53, ρ < 0.01	0 0.05 0.15 0.25	0.09	[0.04; 0.15] [0.00; 0.34]	100.0%	



WPR: Broad Ages (5-100 y.o.)

Study (Age Range)	Cases Der	ominator	Rotavirus Prevalence Po	int Prev	95% CI	Weight
Fletcher 2015 (13-24) Cheun 2010 (10-49) Zhang 2016 (5-100) Zhang 2017 (5-65) Thongprachum 2015 (5-100)	345 20 17 13	164 12216 271 224 156	· ·	0.03 0.07 0.08	[0.00; 0.04] [0.03; 0.03] [0.05; 0.11] [0.05; 0.12] [0.05; 0.14]	13.6% 15.5% 14.3% 14.1% 13.6%
Nakamura 2016 (6-100) Barnes 1997 (5-100)	35 45	309 282			[0.08; 0.16] [0.12; 0.21]	14.5% 14.4%
Overall Effect Prediction Interval Heterogeneity: /2 = 95%, τ2 = 0	.0110, p < 0.0	13622	0 0.05 0.1 0.15 0.2 0.25	0.07	[0.03; 0.13] [0.00; 0.28]	100.0%



Appendix 6B: Income Regions by Age

Low/Lower-Middle Income by Age Groups

Upper-Middle Income by Age Groups

High Income by Age Groups



Low/Lower-Middle Income Countries by Age Group

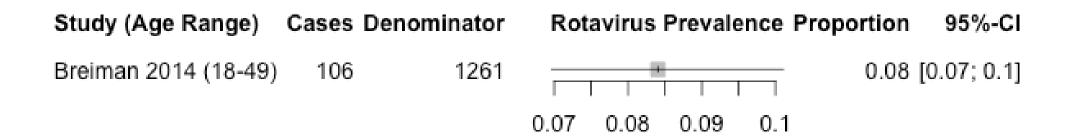


<u>Low/Lower-Middle Income Countries:</u> <u>Older Children and Adolescents (5-20 y.o.)</u>

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight
Bingnan 1991 (5-10)	2	419	B-1	0.00	[0.00; 0.02]	12.8%
Das 2013 (5-19)	218	6859		0.03		14.3%
Steenland 2013 (5-17)	9	231	-	0.04	[0.02; 0.08]	11.7%
Faruque 2009 (5-14)	70	1197		0.06	[0.05; 0.07]	13.8%
Elhag 2013 (5-14)	12	182		0.07	[0.04; 0.12]	11.1%
Breiman 2014 (5-17)	44	664	-8-	0.07	[0.05: 0.09]	13.4%
Uchida 2006 (5-14)	18	260	-	0.07	[0.04; 0.11]	11.9%
Tatte 2010 (10-18)	15	174	-	0.09	[0.05; 0.14]	11.0%
Overall Effect		9986		0.05	[0.03; 0.08]	100.0%
Prediction Interval				400.4	[0.00; 0.15]	
Heterogeneity: $I^2 = 90\%$,	$\tau^2 = 0.0$	045, p < 0.01	1 1 1 1 1		Daniel Charles	
			0.02 0.06 0.1 0.14	1		



Low/Lower-Middle Income Countries: Younger Adults (15-50 y.o.)





Low/Lower-Middle Income Countries: Older Adults (50-100 y.o.)

Denominator			
473		4 [0.03; 0.07] 6 [0.03; 0.10]	
= 0.39		5 [0.00; 0. 17]	100.0%
	2 207	2 207 0.0 680 9.6	2 207 0.06 [0.03; 0.10] 680 0.05 [0.00; 0.17] = 0.39



Low/Lower-Middle Income Countries: Broad Adult Ages (15-100 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight
Steenland 2013 (18-65) Das 2013 (19-100) Faruque 2009 (15-59) Uchida 2006 (15-100) Tatte 2010 (19-100) Elhag 2013 (15-100)	598 177 19 97 18	957 16050 4053 385 1380 198		0.04 0.05 0.07	[0.00; 0.02] [0.03; 0.04] [0.04; 0.05] [0.03; 0.08] [0.06; 0.09] [0.06; 0.14]	17.9% 17.7% 15.8% 17.3%
Overall Effect Prediction Interval Heterogeneity: /2 = 94%,	r ² = 0.002	23023 49, <i>p</i> ≤ 0.01	0.05 0.1 0.15	0.04	[0.02; 0.08] [0.00; 0.17]	100.0%



Low/Lower-Middle Income Countries: Broad Ages (5-100 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight
Bingnan 1991 (10-100) Chowdury 2005 (5-100) Lahon 2013 (11-100) Nayak 2018 (5-100) Tatte 2014 (10-100) Nair 2010 (5-100) Jain 2016 (5-100)	21 283 56 44 35 181 24 51	1951 5653 951 728 371 1871 176 360		0.05 0.06 0.06 0.09 0.10 0.14	[0.01; 0.02] [0.04; 0.06] [0.05; 0.08] [0.04; 0.08] [0.07; 0.13] [0.08; 0.11] [0.09; 0.20] [0.11; 0.18]	13.0% 13.1% 12.8% 12.6% 12.2% 13.0% 11.2%
Overall Effect Prediction Interval Heterogeneity: I ² = 97%,		12061	0.05 0.1 0.15 0.2		[0.04; 0.12] [0.00; 0.24]	CATALON I



Upper-Middle Income Countries by Age Group



<u>Upper-Middle Income Countries:</u> <u>Older Children and Adolescents (5-20 y.o.)</u>

Study (Age Range)	Cases De	nominator	Rotavirus Prevalence F	Point Prev	95% CI	Weight
Unal 2016 (7-10) Hacimustafaoğlu 2011 (5-14) Carvalho-Costa 2011 (5-12) Wang 2007 (6-19) Podkolzin 2009 (5-14) Hasing 2009 (5-20)	26.00 46.00 65.00 85.00 73.44 30.00	246 368 483 440 360 131		0.12 0.13 0.19 0.20	[0.07; 0.15] [0.09; 0.16] [0.11; 0.17] [0.16; 0.23] [0.16; 0.25] [0.16; 0.31]	18.1% 17.8% 17.3%
Overall Effect Prediction Interval Heterogeneity: $I^2 = 80\%$, $\tau^2 = 0$.	0035 ρ < 0	2028	0.1 0.15 0.2 0.25 0.3		[0.11; 0.21] [0.05; 0.31]	



<u>Upper-Middle Income Countries: Younger Adults (15-50 y.o.)</u>

Study (Age Range)	Cases Den	ominator	Rotavirus Prevalence I	Point Prev	95% CI	Weight
Zhu 2013 (20-49) Gong 2018 (18-44) Wang 2007 (20-49) Jia 2016 (18-40) Amarilla 2007 (18-37)	6 276 117 22 77	348 4173 1378 211 430		0.07 0.08 0.10		19.7% 20.8% 20.6% 19.0% 19.9%
Overall Effect Prediction Interval Heterogeneity: /2 = 95%	6, x ² = 0.0116	6540 ρ < 0.01	00.05 0.15 0.25 0.35	0.08	[0.02; 0.17] [0.00; 0.38]	100.0%



Upper-Middle Income Countries: Older Adults (50-100 y.o.)

Study (Age Range)	Cases I	Denominator	Rotavirus Prevalence Po	int Prev	95% CI	Weight
Zhu 2013 (50-100) Zhang 2017 (65-100) Gong 2018 (60-100) Carvalho-Costa 2011 (60-100) Wang 2007 (50-100) Amarilla 2007 (57-100)	3 149 207 16 73 26	165 3857 2345 179 659 170		0.04 0.09 0.09 0.11	[0.00; 0.06] [0.03; 0.05] [0.08; 0.10] [0.05; 0.14] [0.09; 0.14] [0.10; 0.22]	15.4% 18.1% 18.0% 15.6% 17.4% 15.5%
Overall Effect Prediction Interval Heterogeneity: $l^2 = 96\%$, $\tau^2 = 0.00$	083, p ≤ 0	7375 0.01	0.05 0.1 0.15 0.2 0.25	0.08	[0.03; 0.14] [0.00; 0.28]	100.0%



<u>Upper-Middle Income Countries: Broad Adult Ages (15-100 y.o.)</u>

Study (Age Range)	Cases Der	nominator	Rotavirus Prevalence	Point Prev	95% CI	Weight
Zhirakovskala 2016 (16-100)	3.000	107	4-	0.03	[0.01; 0.09]	6.1%
Stroni 2014 (15-100)	64.000	1000	10 dec		[0.05; 0.08]	7.6%
Wang 2009 (15-100)	83.000	1088	-	0.08	[0.06; 0.09]	7.6%
Podkolzin 2009 (18-100)	111.028	1354		0.08	[0.07, 0.10]	7.7%
Carvalho-Costa 2011 (30-60)	50.000	607	-		[0.06, 0.11]	7.5%
Shen 2013 (15-100)	138.000	1479	*	0.09	[0.08; 0.11]	7.7%
Luchs 2014 (18-100)	197.000	2102	-		[0.08; 0.11]	7.7%
Gong 2018 (44-59)	231.000	2265	# 1		[0.09; 0.12]	7.8%
Wang 2017 (15-100)	48.000	441	-		[0.08, 0.14]	7.3%
Wang 2011 (15-90)	96,000	795	-		[0.10; 0.15]	10.00
Jia 2016 (41-60)	13.000	101	-		[0.07; 0.21]	6.0%
Kittigul 2014 (18-100)	27.000	131			[0.14; 0.29]	6.4%
Hasing 2009 (20-100)	26.000	118	-		[0.15; 0.31]	6.2%
Amarilla 2007 (38-57)	52.000	201	-		[0.20; 0.33]	6.8%
Overall Effect Prediction Interval		11789	_	0.11	[0.08; 0.15] [0.02; 0.27]	100.0%
Heterogeneity: $l^2 = 88\%$. $\tau^2 = 0$.	0080 0 < 0.01				[0.02, 0.27]	
riciciogenenty. r = ob /a, r = o.	10000 D - 0:01		0.05 0.15 0.05			
			0.05 0.15 0.25			



<u>Upper-Middle Income Countries: Broad Ages (5-100 y.o.)</u>

Study (Age Range)	Cases	Denominator	Rotavirus	Prevalence	Point Prev	95% CI	Weight	
Unal 2016 (11-20) Carvalho-Costa 2011 (12-30) Bittencourt 2000 (5-100) Zhang 2016 (5-100) Zhang 2017 (5-65) Degiuseppe 2016 (5-100) Konca 2014 (5-100) Mladenova 2010 (5-100) da Silva 2017 (5-100)	22 29 8 20 17 275 52 45 73	459 109 271 224 3459 583 293			0.06 0.07 0.07 0.08 0.08 0.09 0.15	[0.04; 0.08] [0.04; 0.09] [0.03; 0.14] [0.05; 0.11] [0.05; 0.12] [0.07; 0.09] [0.07; 0.12] [0.12; 0.20] [0.28; 0.42]	10.1% 11.1% 10.9% 11.7% 11.4% 11.1%	
Overall Effect Prediction Interval Heterogeneity: $I^2 = 93\%$, $\tau^2 = 0$	0141, p	6012 < 0.01	0.1 0	.2 0.3 0.4		[0.05; 0.17] [0.00; 0.34]	100.0%	



High Income Countries by Age Group



High Income Countries: Older Children and Adolescents (5-20 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus P	revalence	Point Prev	95% CI	Weight
de Wit 2001 (5-11)	2	128	- 4-			[0.00; 0.06]	8.5%
Fernández 2010 (6-15)	23	461	_ T			[0.03; 0.08]	9.3%
Banyai 2003 (5-14) Andersson 2017 (6-10)	16 30	304 566	-			[0.03; 0.09] [0.04; 0.08]	9.1% 9.3%
Grassi 2008 (5-16)	16	284				[0.03; 0.09]	9.1%
Sethi 2001 (5-15)	19	319	-		0.06	[0.04; 0.09]	9.1%
Cheun 2010 (6-9)	233	2979	2.0		0.08	[0.07; 0.09]	9.6%
Fletcher 2015 (5-12)	15	168			0.09	[0.05; 0.15]	8.7%
Isabel 2018 (5-19)	35	284	-		0.12	[0.09; 0.17]	9.1%
Szücs 1999 (5-14)	188	1235			0.15	[0.13; 0.17]	9.5%
Hemming-Harlo 2016 (5-15)	49	150		-	0.33	[0.25; 0.41]	8.6%
Overall Effect		6878	-		0.08	[0.04; 0.14]	100.0%
Prediction Interval Heterogeneity: I ² = 94%; I ² = 1	0145	1002				[0.00; 0.30]	
motorogenery, r = p4 (0; 1 = 0	474 14 P. F	-0,01	11.0	02 11	(- ·		
			0.1 0.2	0.3 0.4			



High Income Countries: Younger Adults (15-50 y.o.)

Study (Age Range)	Cases Den	ominator	Rotavirus Prevalence Poin	it Prev	95% CI	Weight
Fletcher 2015 (25-49) Grytdal 2016 (26-45)	0	287 250			[0.00; 0.02] [0.01; 0.04]	
Overall Effect Heterogeneity: /2 = 88%	$s, t^2 = 0.0071$	537 p < 0.01		0.00	(0.00, 0.58)	100.0%
Tanibal Maria Angel		D. Jaken	0.01 0.02 0.03 0.04			



High Income Countries: Older Adults (50-100 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence I	Point Prev	95% CI	Weight
Fletcher 2015 (50-100) Cheun 2010 (50-100) Grytdal 2016 (65-100) Andersson 2017 (70-100) de Wit 2001 (60-100) Fernández 2010 (65-99)	371 7 269 3	461 15394 251 9276 102 828		0.03 0.03 0.03	[0.00; 0.02] [0.02; 0.03] [0.01; 0.06] [0.03; 0.03] [0.01; 0.09] [0.02; 0.05]	15.6% 23.6% 12.0% 23.4% 7.0% 18.4%
Overall Effect Prediction Interval Heterogeneity: $I^2 = 76\%$, $\tau^2 =$	= 0.0010	26312 0, ρ < 0.01	0.02 0.04 0.06 0.08	0.02	[0.01; 0.04] [0.00; 0.06]	100.0%



High Income Countries: Broad Adult Ages (15-100 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight
Germani 1994 (15-100)	0	420	F	0.00	[0.00; 0.01]	7.9%
Isabel 2018 (20-100)	1	107	*	0.01	[0.00; 0.06]	7.1%
de Wit 2001 (30-59)	6	313	Act I	0.02	[0.01: 0.04]	7.8%
Grytdal 2016 (45-65)	7	360			[0.01: 0.04]	7.9%
Andersson 2017 (41-70)	86	3909	- 6		[0.02; 0.03]	8.2%
Anderson 2011 (24-89)	18	620	-		[0.02; 0.05]	8.0%
Nilsson 2000 (15-100)	23	750	*		10.02; 0.051	8.0%
Huhulescu 2008 (40-100)	4	130	*		[0.01: 0.08]	7.3%
Fernández 2010 (16-64)	29	709	-		[0.03: 0.06]	8.0%
Hilmarsdóttir 2011 (30-83)		240			[0.05; 0.12]	7.7%
Jansen 2008 (18-100)	12	104			[0.06; 0.20]	7.1%
Nakajima 2001 (18-100)	108	683	-		[0.13; 0.19]	8.0%
Bresee 2012 (18-91)	19				[0.11; 0.27]	7.1%
Overall Effect		8451		0.04	[0.02; 0.08]	100.0%
Prediction Interval Heterogeneity: $I^2 = 96\%$, τ^2 :	= 0.0145				[0.00; 0.22]	
A STATE OF THE STA			0 0.05 0.1 0.15 0.2 0.25			



High Income Countries: Broad Ages (5-100 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight
Atchison 2016 (5-100)	343	287724	10.	0.00	[0.00; 0.00]	9.1%
Fletcher 2015 (13-24)	1	164	·		[0.00; 0.04]	8.0%
Grytdal 2016 (5-25)	2	170				
Cheun 2010 (10-49)	345	12216	80		[0.03; 0.03]	
Andersson 2017 (11-40)	66	2200			[0.02; 0.04]	
de Wit 2001 (5-29)	8	266			[0.01; 0.06]	
de Wit 2001 (12-100)	8 5	107		0.05	[0.02; 0.11]	7.6%
Huhulescu 2008 (5-39)		156	-	0.05	[0.02; 0.10]	8.0%
Hilmarsdottir 2011 (5-29)	8	121		0.07		
Thongprachum 2015 (5-100)		156		0.08	[0.05; 0.14]	8.0%
Nakamura 2016 (6-100)	35	309			[0.08; 0.16]	
Barnes 1997 (5-100)	45	282			[0.12; 0.21]	8.5%
Overall Effect		303871		0.04	[0.02; 0.08]	100.0%
Prediction Interval Heterogeneity: $I^2 = 99\%$, $\tau^2 = 0$.0112, p	< 0.01			[0.00; 0.19]	
Warring of all and the Tal		- 1,4	0 0.05 0.1 0.15 0.2			



Appendix 6C: Study Setting by Age

Community by Age Groups

Inpatient by Age Groups

Outpatient by Age Groups

General Hospital by Age Groups



Community by Age Group



<u>Community:</u> <u>Older Children and Adolescents (5-20 y.o.)</u>

Study (Age Range)	Cases Den	ominator	Rotavirus Prevalence	Point Prev	95% CI	Weight
de Wit 2001 (5-11) Sethi 2001 (5-15) Elhag 2013 (5-14) Breiman 2014 (5-17) Isabel 2018 (5-19) Hasing 2009 (5-20)	19 12 44 35 30	128 319 182 664 284 131		0.06 0.07 0.07 0.12	[0.00; 0.06] [0.04; 0.09] [0.04; 0.12] [0.05; 0.09] [0.09; 0.17] [0.16; 0.31]	15.9% 17.1% 16.5% 17.6% 17.0% 15.9%
Overall Effect Prediction Interval Heterogeneity: /2 = 89%	$t_{\rm s}, \tau^2 = 0.0140$	1708 0, p < 0.01	00.05 0.15 0.25 0.35		[0.03; 0.17] [0.00; 0.36]	100.0%



Community: Younger Adults (15-50 y.o.)

 Study (Age Range)
 Cases Denominator
 Rotavirus Prevalence Proportion
 95%-CI

 Breiman 2014 (18-49)
 106
 1261
 0.07
 0.08
 0.09
 0.1



Community: Older Adults (50-100 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight	
de Wit 2001 (60-100) Breiman 2014 (50-100)	3 12	102 207		The second secon	[0.01; 0.09] [0.03; 0.10]		
Overall Effect Heterogeneity: $I^2 = 27\%$,	$\tau^2 = 0.00$	$0.07, \hat{p} = 0.24$	0.02 0.04 0.06 0.08 0.1		[0.00; 0.37]	100.0%	



Community: Broad Adult Ages (15-100 y.o.)

Study (Age Range)	Cases Den	ominator	Rotavirus Prevalence Poi	nt Prev	95% CI	Weight
Isabel 2018 (20-100) de Wit 2001 (30-59) Huhulescu 2008 (40-100) Hilmarsdóttir 2011 (30-83) Elhag 2013 (15-100) Hasing 2009 (20-100)	1 6 4 19 18 26	107 313 130 240 198 118		0.09		16.1% 17.3% 16.4% 17.1% 16.9% 16.2%
Overall Effect Prediction Interval Heterogeneity: I ² = 91%, τ ²	= 0,0186, p <	1106 0.01	00.05 0.15 0.25 0.35	0.06	[0.01; 0.15] [0.00; 0.38]	100.0%



Community: Broad Ages (5-100 y.o.)

Study (Age Range)	Cases Den	ominator	Rotavirus Prevalence Poi	nt Prev	95% CI	Weight
de Wit 2001 (5-29) de Wit 2001 (12-100) Huhulescu 2008 (5-39) Hilmarsdóttir 2011 (5-29)	8 5 8 9	266 107 156 121		0.05	[0.01; 0.06] [0.02; 0.11] [0.02; 0.10] [0.04; 0.14]	37.7% 17.8% 24.6% 19.8%
Overall Effect Prediction Interval Heterogeneity: I ² = 19%, τ ²	² = 0.0003, p =	650 0.30	0.02 0.06 0.1 0.14	0.05	[0.02; 0.08] [0.01; 0.11]	100.0%



Inpatient by Age Group



<u>Inpatient:</u> Older Children and Adolescents (5-20 y.o.)

Study (Age Range) Ca	ases C	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight
Banyai 2003 (5-14) 1	9.00	231 304	*	0.05	[0.02; 0.08] [0.03; 0.09]	12.5%
Unal 2016 (7-10) 2	33,00 26,00 16,00	2979 246 368	-	0.11	[0.07; 0.09] [0.07; 0.15] [0.09; 0.16]	12.3%
Szücs 1999 (5-14) 18	38.00 3.44	1235 360	-	0.15	[0.13; 0.17] [0.16; 0.25]	12.9%
	19.00	150	-	10000	[0.25; 0.41]	
Overall Effect Prediction Interval Heterogeneity: I ² = 95%, τ ² = 0.016	35, p <	5873 0.01		0.12	[0.06; 0.20] [0.00; 0.41]	
and the property of the second			0.1 0.2 0.3 0.4	1		



Inpatient: Younger Adults (15-50 y.o.)

No data reported



Inpatient: Older Adults (50-100 y.o.)

 Study (Age Range)
 Cases Denominator
 Rotavirus Prevalence Proportion
 95%-CI

 Cheun 2010 (50-100)
 371
 15394
 0.022
 0.024
 0.026



Inpatient: Broad Adult Ages (15-100 y.o.)

Study (Age Range)	Cases Der	ominator	Rotavirus Prevalence	Point Prev	95% CI	Weight
Steenland 2013 (18-65) Anderson 2011 (24-89) Nilsson 2000 (15-100) Stroni 2014 (15-100) Podkolzin 2009 (18-100) Jansen 2008 (18-100) Kittigul 2014 (18-100)	8.000 18.000 23.000 64.000 111.028 12.000 27.000	957 620 750 1000 1354 104 131	-	0.01 0.03 0.03 0.06 0.08 0.12 0.21	[0.02; 0.05] [0.05; 0.08] [0.07; 0.10]	14.6% 14.7% 14.8% 14.8% 12.9%
Overall Effect Prediction Interval Heterogeneity: /2 = 96%, 7	= 0.0148, p <	4916 0.01	0 0.05 0.15 0.25	0.06	[0.02; 0.13] [0.00; 0.31]	



Inpatient: Broad Ages (5-100 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence F	Point Prev	95% CI	Weight
Atchison 2016 (5-100) Cheun 2010 (10-49) Unal 2016 (11-20) Nayak 2018 (5-100) Nair 2010 (5-100) Jain 2016 (5-100) Mladenova 2010 (5-100) Barnes 1997 (5-100)	343 345 22 44 181 24 45 45	287724 12216 404 728 1871 176 293 282		0.03 0.05 0.06 0.10 0.14 0.15	[0.00; 0.00] [0.03; 0.03] [0.04; 0.08] [0.04; 0.08] [0.08; 0.11] [0.09; 0.20] [0.12; 0.20] [0.12; 0.21]	
Overall Effect Prediction Interval Heterogeneity: I ² = 100%,	$\tau^2 = 0.01$	303694 65, ρ = 0	0 0.05 0.15 0.25	0.07	[0.03; 0.14] [0.00; 0.32]	100.0%



Outpatient by Age Group



Outpatient: Older Children and Adolescents (5-20 y.o.)

No data reported



Outpatient: Younger Adults (15-50 y.o.)

Study (Age Range)	Cases Dend	ominator	Rotavirus Prevalenc	e Point Prev	95% CI	Weight
Grytdal 2016 (26-45) Zhu 2013 (20-49) Jia 2016 (18-40)	4 6 22	250 348 211		0.02	[0.01; 0.04] [0.01; 0.04] [0.07; 0.16]	
Overall Effect Prediction Interval Heterogeneity: /2 = 925	%, τ ² = 0.0122	809 , ρ < 0.01	0 0.2 0.4 0.6 0.8	0.04	[0.00; 0.21] [0.00; 1.00]	100.0%



Outpatient: Older Adults (50-100 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevale	nce Point Prev	95% CI	Weight
Zhu 2013 (50-100) Grytdal 2016 (65-100) Zhang 2017 (65-100)	3 7 149	165 251 3857	=	0.03	[0.00; 0.06] [0.01; 0.06] [0.03; 0.05]	13.9% 19.4% 66.8%
Overall Effect Prediction Interval Heterogeneity: /2 = 37%	$r^2=0.0$	4273 0003, ρ = 0,20	0 0.05 0.1 0.15	-1	[0.01; 0.06] [0.00; 0.22]	100.0%



Outpatient: Broad Adult Ages (15-100 y.o.)

Study (Age Range)	Cases Deno	minator	Rotavirus Preval	lence Point Prev	95% CI	Weight
Grytdal 2016 (45-65) Wang 2017 (15-100) Jia 2016 (41-60)	7 48 13	360 441 101	9	0.11	[0.01; 0.04] [0.08; 0.14] [0.07; 0.21]	34.5% 34.8% 30.8%
Overall Effect Prediction Interval Heterogeneity: /2 = 94%	$r^2 = 0.0141$	902 ρ < 0.01	0 0.2 0.4 0.6 0		0.00; 0.30] 0.00; 1.00]	100.0%



Outpatient: Broad Ages (5-100 y.o.)

Study (Age Range) Cases Denom	inator	Rotavirus Prevalence Point Prev	95% CI Weight
Grytdal 2016 (5-25) 2 Zhang 2016 (5-100) 20	170 271		[0.00; 0.05] 49.0% [0.05; 0.11] 51.0%
Overall Effect Heterogeneity: $I^2 = 91\%$, $\tau^2 = 0.0127$, μ	441 0 < 0.01	0.02 0.06 0.1	[0.00, 0.90] 100.0%



General Hospital by Age Group



General Hospital: Older Children and Adolescents (5-20 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight
Bingnan 1991 (5-10)	2	419	6	0.00	[0.00; 0.02]	9.2%
Das 2013 (5-19)	218	6859			[0.03; 0.04]	9.7%
Fernández 2010 (6-15)	23	461			[0.03; 0.08]	9.2%
Andersson 2017 (6-10)	30	566			[0.04; 0.08]	9.3%
Grassi 2008 (5-16)	16	284	-		[0.03; 0.09]	8.9%
Faruque 2009 (5-14)	70	1197			0.05; 0.07	9.5%
Uchida 2006 (5-14)	18	260			[0.04: 0.11]	8.8%
Tatte 2010 (10-18)	15				[0.05; 0.14]	
Fletcher 2015 (5-12)	15				[0.05; 0.15]	8.4%
Carvalho-Costa 2011 (5-12)			_		[0.11; 0.17]	9.2%
Wang 2007 (6-19)	85				[0.16; 0.23]	9.2%
Overall Effect Prediction Interval		11311		0.07	[0.04; 0.10] [0.00; 0.22]	100.0%
Heterogeneity: $I^2 = 96\%$, $\tau^2 = 0$	0.0005, p	< 0.01			[0.00, 0.22]	
			0.05 0.1 0.15 0.2			



General Hospital: Younger Adults (15-50 y.o.)

Study (Age Range)	Cases	Denominator	Rotavir	us Pre	vale	nce F	oint	Prev	9	5% CI	Weight
Fletcher 2015 (25-49) Gong 2018 (18-44) Wang 2007 (20-49) Amarilla 2007 (18-37)	276 117 77	287 4173 1378 430	4					0.08	0.06	0,02] 0,07] 0,10] 0,22]	25.2%
Overall Effect Prediction Interval Heterogeneity: 12 = 98%	$a_1, a_2^2 = 0.$	6268 0325, p < 0.01	0 0.2	0.4	0.6	0.8		0.06		0.26] 0.81]	100.0%



General Hospital: Older Adults (50-100 y.o.)

Study (Age Range)	Cases Deno	minator	Rotavirus Prevalence P	oint Prev	95% CI	Weight
Fletcher 2015 (50-100) Andersson 2017 (70-100) Fernández 2010 (65-99) Faruque 2009 (60-100) Gong 2018 (60-100) Carvalho-Costa 2011 (60-100) Wang 2007 (50-100) Amarilla 2007 (57-100)	3 269 30 20 207 16 73 26	461 9276 828 473 2345 179 659 170		0.03 0.04 0.04 0.09 0.09 0.11	[0.00; 0.02] [0.03; 0.03] [0.02; 0.05] [0.03; 0.07] [0.08; 0.10] [0.05; 0.14] [0.09; 0.14] [0.10; 0.22]	12.5% 13.2% 12.8% 12.5% 13.1% 11.6% 12.7% 11.5%
Overall Effect Prediction Interval Heterogeneity: $I^2 = 97\%$, $\tau^2 = 0.0$	102, p < 0.01	14391	0 0.05 0.1 0.15 0.2	0,06	[0.03; 0.11] [0.00; 0.24]	



General Hospital: Broad Adult Ages (15-100 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight
Germani 1994 (15-100)	0	420	~	0.00	[0.00; 0.01]	5.9%
Andersson 2017 (41-70)	86	3909	g	0.02	[0.02; 0.03]	6.1%
Zhirakovskaja 2016 (16-100)	-3	107	-	0.03	[0.01; 0.09]	5.2%
Das 2013 (19-100)	598	16050	9	0.04	[0.03; 0.04]	6,1%
Fernández 2010 (16-64)	29	709	*	0.04	[0.03; 0.06]	
Faruque 2009 (15-59)	177	4053		0.04	[0.04; 0.05]	
Uchida 2006 (15-100)	19	385	199	0.05	[0.03; 0.08]	5.8%
Tatte 2010 (19-100)	97	1380	*	0.07	[0.06; 0.09]	6.0%
Wang 2009 (15-100)	-83	1088	36	0.08	[0.06; 0.09]	6.0%
Carvalho-Costa 2011 (30-60)	50		-86	0.08	[0.06; 0.11]	5.9%
Shen 2013 (15-100)	138	1479	-	0.09	[0.08; 0.11]	6.0%
Luchs 2014 (18-100)	197	2102		0.09	[0.08; 0.11]	6.1%
Gong 2018 (44-59)	231	2265		0.10	[0.09; 0.12]	6.1%
Wang 2011 (15-90)	96	795	-	0.12	[0.10; 0.15]	6.0%
Nakajima 2001 (18-100)	108	683	-	0.16	[0.13; 0.19]	5.9%
Bresee 2012 (18-91)	19	106		0.18	[0.11; 0.27]	5.2%
Amarilla 2007 (38-57)	52	201	-	0.26	[0.20; 0.33]	5.6%
Overall Effect		36339	-	0.07	[0.04; 0.11]	100.0%
Prediction Interval	0442.5	- 0.04			[0.00; 0.26]	
Heterogeneity: $I^2 = 98\%$, $\tau^2 = 0$.	W (43, D	~ 0.01	A			
			0.05 0.15 0.25			



General Hospital: Broad Ages (5-100 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight	
Fletcher 2015 (13-24)	.1	164			[0.00; 0.04]	6.4%	
Bingnan 1991 (10-100)	21	1951	5		[0.01; 0.02]	7.7%	
Andersson 2017 (11-40) Chowdury 2005 (5-100)	66	No. 20 No. 2	-		[0.02; 0.04]	7.7%	
Lahon 2013 (11-100)	283 56		-	0.05 0.06	[0.04; 0.06]	7.8% 7.6%	
Carvalho-Costa 2011 (12-30)	29	459	-	0.06	[0.04; 0.09]	7.3%	
Bittencourt 2000 (5-100)	8	109	*	0.07	[0.03; 0.14]	5.8%	
Zhang 2017 (5-65)	17	224		0.08	[0.05; 0.12]	6.7%	
Degiuseppe 2016 (5-100)	275		*		[0.07; 0.09]	7.8%	
Thongprachum 2015 (5-100)	13		-		[0.05; 0.14]	6.3%	
Konca 2014 (5-100)	52			0.09		7.4%	
Tatte 2014 (10-100)	35	371	-		[0.07; 0.13]	7.2%	
Nakamura 2016 (6-100)	35	309	-	0.11	[0.08; 0.16]	7.0%	
Jain 2016 (5-100)	51	360	_	0.14	[0.11; 0.18]	7.1%	
Overall Effect		16949		0.06	[0.04; 0.09]	100.0%	
Prediction Interval Heterogeneity: $I^2 = 96\%$, $\tau^2 = 0$.	0066, p	< 0.01			[0.00; 0.18]		
and the second second	44-66		0.05 0.1 0.15				



Hospital and Community: Broad Ages (5-100 y)

 Study (Age Range)
 Cases Denominator
 Rotavirus Prevalence Proportion
 95%-CI

 da Silva 2017 (5-100)
 73
 210
 0.35 [0.28; 0.42]

 0.3
 0.34
 0.38



Appendix 6D: Study Period by Age

1990s by Age Groups

2000s by Age Groups

2010s by Age Groups



1990s by Age Group



<u>1990s:</u> Older Children and Adolescents (5-20 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight
Bingnan 1991 (5-10)	2	419		0.00	[0.00; 0.02]	14.6%
de Wit 2001 (5-11)	2	128	-	0.02	[0.00: 0.06]	13.1%
Banyai 2003 (5-14)	16	304		0.05	[0.03; 0.09]	14,3%
Faruque 2009 (5-14)		1197	-	0.06	[0.05; 0.07]	15.1%
Sethi 2001 (5-15)	19	319		0.06	[0.04; 0.09]	14.3%
Tatte 2010 (10-18)	15	174		0.09	[0.05, 0.14]	13.6%
Szücs 1999 (5-14)	188	1235		0.15	[0.13: 0.17]	15.1%
Overall Effect		3776		0.05	[0.02; 0.11]	100.0%
Prediction Interval					[0.00; 0.25]	
Heterogeneity: $I^2 = 96$?	$6. e^2 = 0.$	0112, p < 0.01			4 5 155	
1 T. M			D D.05 D.1 D.15 D.2 O.	25		



1990s: Younger Adults (15-50 y.o.)

No data reported



1990s: Older Adults (50-100 y.o.)

Study (Age Range)	Cases Deno	minator	Rotavirus Prevalence	Point Prev	95% CI	Weight
de Wit 2001 (60-100) Faruque 2009 (60-100)	3 20	102 473			[0.01; 0.09] [0.03; 0.07]	
Overall Effect Heterogeneity: $I^2 \equiv 0\%$, τ^2 :	≅ 0, p = 0.52	575	0.02 0.04 0.06 0.08		-[0.00; 0.13 <u>]</u>	100.0%



1990s: Broad Adult Ages (15-100 y.o.)

Study (Age Range)	Cases	Denominator	Rotavi	irus Prevalence	Point Prev	95% CI	Weight	
Germani 1994 (15-100)	0	420	Œ		0.00	[0.00; 0.01]	16.5%	
de Wit 2001 (30-59)	6	313	196		0.02	[0.01: 0.04]	16.3%	
Nilsson 2000 (15-100)	23	750	2-		0.03	[0.02, 0.05]	16.7%	
Faruque 2009 (15-59)	177	4053	0		0.04	[0.04: 0.05]	17.0%	
Tatte 2010 (19-100)	97	1380			0.07	10.06: 0.091	16.9%	
Nakajima 2001 (18-100)	108	683		-	2.7.7.25	[0.13, 0.19]	16.7%	
Overall Effect		7599		-	0.04	[0.00; 0.11]	100.0%	
Prediction Interval						[0.00; 0.32]	F3	
Heterogeneity: $I^2 = 98\%$, τ	= 0.018	1.0 < 0.01		James Land		factal altal		
		45,744,	0 0 050	10.150.20.250.3	E.			



1990s: Broad Ages (5-100 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight
Bingnan 1991 (10-100)	21	1951	2	0.01	[0.01, 0.02]	15.6%
de Wit 2001 (5-29)	-8	266	-	0.03	[0.01; 0.06]	14.2%
de Wit 2001 (12-100)	5	107		0.05	[0.02; 0.11]	12.4%
Chowdury 2005 (5-100)	283	5653	E-	0.05	[0.04; 0.06]	15.8%
Lahon 2013 (11-100)	56	951	-	0.06	10.05; 0.08]	15.4%
Bittencourt 2000 (5-100)		109		0.07	10.03, 0.141	
Barnes 1997 (5-100)	45	282	-	0.16	[0.12; 0.21]	14.3%
Overall Effect		9319		0.05	[0.02; 0.10]	100.0%
Prediction Interval			-	•	[0.00; 0.22]	
Heterogeneity: / = 96%, +	= 0.008	3. p < 0.01	1- 0- 1- 1- 1			
The state of the s		24, 554.0	0 0.05 0.1 0.15 0.2	5		



2000s by Age Group



<u>2000s:</u> Older Children and Adolescents (5-20 y.o.)

Study (Age Range)	Cases Den	ominator	Rotavirus Prevalence	Point Prev	95% CI	Weight	
Das 2013 (5-19)	218.00	6859	E	0.03	[0.03; 0.04]	8.9%	
Fernández 2010 (6-15)	23.00	461		0.05	[0.03, 0.08]	8.5%	
Grassi 2008 (5-16)	16.00	284		0.06	[0.03; 0.09]	8.2%	
Elhag 2013 (5-14)	12.00	182		0.07	[0.04, 0.12]	7.9%	
Breiman 2014 (5-17)	44.00	664	-	0.07	[0.05; 0.09]	8.6%	
Uchida 2006 (5-14)	18.00	260	-	0.07	[0.04; 0.11]	8.2%	
Cheun 2010 (6-9)	233.00	2979		0.08	[0.07; 0.09]	8.9%	
Fletcher 2015 (5-12)	15.00	168		0.09	[0.05; 0.15]	7.8%	
Carvalho-Costa 2011 (5-12)	65.00	483		0.13	[0.11; 0.17]	8.5%	
Wang 2007 (6-19)	85.00	440		0.19	[0.16; 0.23]	8.5%	
Podkolzin 2009 (5-14)	73.44	360	-8-	0.20	[0.16; 0.25]	8.4%	
Hasing 2009 (5-20)	30.00	131		0.23	[0.16; 0.31]	7.5%	
Overall Effect		13271		0.10	[0.06; 0.14]	100.0%	
Prediction Interval			-		[0.01; 0.27]		
Heterogeneity: $I^2 = 97\%$, $\tau^2 = 0$	0.0103, p < 0.0	4					
Company of the Company			0.05 0.1 0.15 0.2 0.25 0.3	3			



2000s: Younger Adults (15-50 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight
Fletcher 2015 (25-49)	0	287	.00	0.00	[0.00; 0.02]	19.7%
Zhu 2013 (20-49)	6	348		0.02	[0.01: 0.04]	19.9%
Breiman 2014 (18-49)	106	1261	-	0.08	[0.07; 0.10]	20.2%
Wang 2007 (20-49)	117	1378	79	0.08	[0.07; 0.10]	20.2%
Amarilla 2007 (18-37)	77	430	*	0.18	[0,14; 0,22]	19.9%
Overall Effect		3704		0.05	[0.00; 0.18]	100.0%
Prediction Interval	2	alable calcul			[0.00; 0.53]	
Heterogeneity: /* = 98%	T = 0.0	277. p < 0.01	8 8 8 8 8 8 8 8 8	F		
			0 0.1 0.2 0.3 0.4 0.9	2		



2000s: Older Adults (50-100 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight
Fletcher 2015 (50-100)	3	461	B-	0.01	[0.00; 0.02]	12.8%
Zhu 2013 (50-100)	3	165	-	0.02	[0.00; 0.06]	11.8%
Cheun 2010 (50-100)	371	15394		0.02	[0.02; 0.03]	13.4%
Fernández 2010 (65-99)	30	828	- 	0.04	[0.02; 0.05]	13.1%
Breiman 2014 (50-100)	12	207	-	0.06	[0.03; 0.10]	12.1%
Carvalho-Costa 2011 (60-100)	16	179		0.09	[0.05; 0.14]	11.9%
Wang 2007 (50-100)	73	659		0.11	[0.09; 0.14]	13.0%
Amarilla 2007 (57-100)	26	170		0.15	[0.10; 0.22]	11.9%
Overall Effect		18063		0.05	[0.02; 0.10]	100.0%
Prediction Interval			-	-	[0.00; 0.23]	A
Heterogeneity: $I^2 = 96\%$, $t^2 = 0.0$	112, p =	0.01	V- 11 H H 4			
			0 0.05 0.1 0.15 0.2			



2000s: Broad Adult Ages (15-100 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight	
Zhirakovskaja 2016 (16-100)	3.000	107	*	0.03	[0.01; 0.09]	5.0%	
Anderson 2011 (24-89)	18.000	620	*	0.03	[0.02; 0.05]	5.8%	
Huhulescu 2008 (40-100)	4.000	130	-	0.03	[0.01; 0.08]	5.2%	
Das 2013 (19-100)	598.000	16050	to.	0.04	[0.03; 0.04]	6.0%	
Fernández 2010 (16-64)	29.000	709	*	0.04	[0.03; 0.06]	5.9%	
Uchida 2006 (15-100)	19.000	385		0.05		5.7%	
Wang 2009 (15-100)	83.000	1088	-	0.08	The second of th		
Hilmarsdóttir 2011 (30-83)	19.000	240		80.0	THE RESERVE AND ADMINISTRATION OF THE PARTY	5.5%	
Podkolzin 2009 (18-100)	111.028	1354	4	80.0	March 19 Control of the Control of t	6.0%	
Carvalho-Costa 2011 (30-60)		607	-	0.08		5.8%	
Elhag 2013 (15-100)	18.000	198	-	0.09	The second secon	5.4%	
Luchs 2014 (18-100)	197.000	2102	-	0.09	[0.08; 0.11]	6.0%	
Jansen 2008 (18-100)	12.000	104	-		[0.06; 0.20]	5.0%	
Wang 2011 (15-90)	96.000	795	= 		[0.10; 0.15]		
Bresee 2012 (18-91)	19.000	106		1,571,581	[0,11: 0.27]	5.0%	
Kittigul 2014 (18-100)	27.000	131			[0.14; 0.29]		
Hasing 2009 (20-100)	26.000	118		7.00	[0.15; 0.31]		
Amarilla 2007 (38-57)	52.000		-		[0.20; 0.33]		
Overall Effect		25045	-	0.09	[0.06; 0,12]	100.0%	
Prediction Interval					[0.01; 0.26]		
Heterogeneity: $I^2 = 98\%$, $\tau^2 = 0.0$	0114. p < 0	1.84			B-112-12-12-12		
			0.050/10.150/20/250/3				
			4.10.40.4.10.40.12.4.4.10.10.10.10.10				



2000s: Broad Ages (5-100 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight
Fletcher 2015 (13-24)	9	164	*	0.01	[0.00; 0.04]	13.5%
Cheun 2010 (10-49)	345	12216	DF.	0.03	[0.03; 0.03]	15.6%
Huhulescu 2008 (5-39)	8	156	-	0.05	[0.02; 0.10]	13.4%
Carvalho-Costa 2011 (12-30)	29	459	-8	0.06	[0.04; 0.09]	14.8%
Hilmarsdóttir 2011 (5-29)	9	121		0.07	[0.04; 0.14]	12.9%
Nair 2010 (5-100)	181	1871	 	0.10	[0.08; 0.11]	15.4%
Miadenova 2010 (5-100)	45	293	-	0.15	[0.12; 0.20]	14_4%
Overall Effect		15280		0.06	[0.02; 0.11]	100.0%
Prediction Interval			-	-	[0.00; 0.25]	
Heterogeneity: $I^2 = 97\%$, $\tau^2 = 0.0$	0098, p <	T0.0				
4			0 0.05 0.1 0.15 0.2			



2010s by Age Group



<u>2010s:</u> Older Children and Adolescents (5-20 y.o.)

Study (Age Range)	Cases	Denominat	or	Rotav	irus Prevalence	Point Prev	95% CI	Weight
Steenland 2013 (5-17)	9	2	31	-		0.04	[0.02; 0.08]	19.9%
Andersson 2017 (6-10)	30	5	66	-		0.05	[0.04: 0.08]	20.5%
Unal 2016 (7-10)	26	2	46	-		0.11	[0.07; 0.15]	20.0%
Isabel 2018 (5-19)	35	2	84	-		0.12	[0.09; 0.17]	20.1%
Hemming-Harlo 2016 (5-15)			50		-		[0.25; 0.41]	
Overall Effect Prediction Interval		14	77			0.11	[0.02; 0.27]	100.0%
Heterogeneity: $I^2 = 95\%$, $\pi^2 = 0$	11246 n	- Not				1	[0.00; 0.61]	
risterogeneity. 1 - 35 W. L - 0	ωεπυ. μ	50.01	- h	0.10	2 0.3 0.4 0.5 0	.6		



2010s: Younger Adults (15-50 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight
Grytdal 2016 (26-45) Gong 2018 (18-44) Jia 2016 (18-40)	276 22		0	0.07	[0.01; 0.04] [0.06; 0.07] [0.07; 0.16]	32.5% 35.6% 31.9%
Overall Effect Prediction Interval Heterogeneity: /2 = 91%	%, † ² = 0,	4634 .0095, p < 0.01	0 0.2 0.4 0.6 0.8	0.06	[0.00; 0.22] [0.00; 1.00]	100.0%



2010s: Older Adults (50-100 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight	
Grytdal 2016 (65-100) Andersson 2017 (70-100) Zhang 2017 (65-100) Gong 2018 (60-100)	7 269 149 207	251 9276 3857 2345	E	0.03 0.04	[0.01; 0.06] [0.03; 0.03] [0.03; 0.05] [0.08; 0.10]	21.1% 26.6% 26.3% 26.0%	
Overall Effect Prediction Interval Heterogeneity: /= 98%, ====	0.0037	15729 , p < 0.01	0 0.05 0.1 0.15 0.2	0.04	[0.01; 0.09] [0.00; 0.24]	100.0%	



2010s: Broad Adult Ages (15-100 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight
Steenland 2013 (18-6)	5) 8	957		0.01	[0.00; 0.02]	11.5%
Isabel 2018 (20-100)	1	107	*	0.01	[0.00; 0.06]	9.8%
Grytdal 2016 (45-65)	7	360		0.02	[0.01; 0.04]	11.1%
Andersson 2017 (41-7	0) 86	3909	Ti .	0.02	[0.02; 0.03]	11.7%
Stroni 2014 (15-100)	64	1000		0.06	[0.05; 0.08]	11.6%
Shen 2013 (15-100)	138	1479	-	0.09	[0.08; 0.11]	11.6%
Gong 2018 (44-59)	231	2265	-	0.10	[0.09; 0.12]	11.7%
Wang 2017 (15-100)	48	441		0.11	[0.08; 0.14]	11.2%
Jia 2016 (41-60)	13	101		0.13		The second second
Overall Effect		10619		0.05	[0.02; 0.10]	100.0%
Prediction Interval				-	[0.00; 0.23]	1
Heterogeneity: $I^2 = 98\%$	$\tau^2 = 0.011$	2, p < 0.01	1 1 1 1			
			0 0.05 0.1 0.15 0.2			



2010s: Broad Ages (5-100 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight
Atchison 2016 (5-100)	343	287724	4	0.00	[0.00; 0.00]	7.0%
Grytdal 2016 (5-25)	2	170	-	0.01	[0.00; 0.05]	6.4%
Andersson 2017 (11-40)	66	2200	W.	0.03	[0.02; 0.04]	6.9%
Unal 2016 (11-20)	22	404	-	0.05	[0.04; 0.08]	6.7%
Nayak 2018 (5-100)	44	728	-	0.06	[0.04; 0.08]	6.8%
Zhang 2016 (5-100)	20	271		0.07	[0.05; 0.11]	6.6%
Zhang 2017 (5-65)	17	224	-	0.08	[0.05, 0.12]	6.5%
Degiuseppe 2016 (5-100)	275	3459		0.08	[0.07; 0.09]	6.9%
Thongprachum 2015 (5-100)	13	156		0.08	[0.05, 0.14]	6.4%
Konca 2014 (5-100)	52	583		0.09	[0.07; 0.12]	6.8%
Tatte 2014 (10-100)	35	371		0.09	[0.07; 0.13]	6.7%
Nakamura 2016 (6-100)	35	309	-	0.11	[0.08; 0.16]	6.6%
Jain 2016 (5-100)	24	176		0.14	[0.09; 0.20]	6.4%
Jain 2016 (5-100)	51	360		0.14	[0.11; 0.18]	6.7%
da Silva 2017 (5-100)	73	210		0.35	[0.28; 0.42]	6.5%
Overall Effect Prediction Interval Heterogeneity: I ² = 99%, τ ² = 0.	0172, p	297345 = 0	0 0.1 0.2 0.3 0	0.08	[0.04; 0.12] [0.00; 0.30]	100.0%



Appendix 6E: Diarrhea Definition by Age

Non-WHO Diarrhea Definition by Age Groups
WHO Diarrhea Definition by Age Groups



Non-WHO Diarrhea Definition by Age Group



Non-WHO Diarrhea Definition: Older Children and Adolescents (5-20 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prev	alence Point Prev	95% CI	Weight
de Wit 2001 (5-11)	2	128	-		[0.00; 0.06]	5.1%
Das 2013 (5-19)	218	6859	100		[0.03; 0.04]	6.0%
Fernández 2010 (6-15)	23	461	7.		[0.03; 0.08]	5.7%
Bányai 2003 (5-14)	16	304	-	0.05		5.6%
Andersson 2017 (6-10)	30	566	-	0.05	[0.04; 0.08]	5.8%
Grassi 2008 (5-16)	16	284	-	0.06	[0.03; 0.09]	5.5%
Faruque 2009 (5-14)	70	1197	-	0.06	[0.05; 0.07]	5.9%
Sethi 2001 (5-15)	19	319	-	0.06	[0.04; 0.09]	5.6%
Elhag 2013 (5-14)	12	182	-4-	0.07	[0.04; 0.12]	5.3%
Uchida 2006 (5-14)	18	260	-		[0.04; 0.11]	5.5%
Tatte 2010 (10-18)	15	174	-	0.09	A CONTRACTOR OF THE PARTY OF TH	5.3%
Fletcher 2015 (5-12)	15	168	-	0.09	And the second s	5.3%
Unal 2016 (7-10)	26	246	-	0.11	[0.07; 0.15]	5.5%
Isabel 2018 (5-19)	35	284	5-8-2		[0.09; 0.17]	5.5%
Carvalho-Costa 2011 (5-12)	65	483	100		[0.11; 0.17]	5.7%
Szűcs 1999 (5-14)	188	1235			[0.13; 0.17]	5.9%
Wang 2007 (6-19)	85	440	0.00		[0.16; 0.23]	5.7%
Hemming-Harlo 2016 (5-15)	49	150			[0.25; 0.41]	
Hemming-Hand 20 to (3-15)	43	130		0.55	[0.25, 0.41]	3.270
Overall Effect		13740	-	0.09	[0.06; 0.12]	100.0%
Prediction Interval Heterogeneity: $I^2 = 96\%$, $\tau^2 = 0$.0113, p	< 0.01	T T	1-1	[0.00; 0.26]	
SECONOMIC ESCAPE EN			0.1 0.2 (0.3 0.4		
				4.5		



Non-WHO Diarrhea Definition: Younger Adults (15-50 y.o.)

Study (Age Range)	Cases Den	ominator	Ro	tavir	is Pr	evale	nce Pol	nt Prev	95% CI	Weight
Fletcher 2015 (25-49) Grytdal 2016 (26-45) Wang 2007 (20-49) Amarilla 2007 (18-37)	117	287 250 1378 430		1				0.08	[0.00; 0.02] [0.01; 0.04] [0.07; 0.10] [0.14; 0.22]	24.9% 24.8% 25.3% 25.1%
Overall Effect Prediction Interval Heterogeneity: /2 = 98%	ύ, τ ² = 0.0359	2345 p < 0.01	0	0.2	0.4	0.6	0.8	0.05	[0.00; 0.25] [0.00; 0.82]	100.0%



Non-WHO Diarrhea Definition: Older Adults (50-100 y.o.)

Study (Age Range)	Cases Den	ominator	Rotavirus Prevalence Poin	t Prev	95% CI	Weight
Fletcher 2015 (50-100) Grytdal 2016 (65-100) Andersson 2017 (70-100) de Wit 2001 (60-100) Fernández 2010 (65-99) Faruque 2009 (60-100) Carvalho-Costa 2011 (60-100) Wang 2007 (50-100) Amarilla 2007 (57-100)	3 7 269 3 30 20 16 73 26	461 251 9276 102 828 473 179 659		0.09	[0.01; 0.06] [0.03; 0.03] [0.01; 0.09]	11.5% 11.0% 12.1% 9.6% 11.8% 11.5% 10.5% 11.7%
Overall Effect Prediction Interval Heterogeneity: $I^2 = 94\%$, $\tau^2 = 0.0$	092. <i>p</i> < 0.01	12399	0 0.05 0.1 0.15 0.2	0.05	[0.02; 0.09] [0.00; 0.20]	100.0%



Non-WHO Diarrhea Definition: Broad Adult Ages (15-100 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight	
Isabel 2018 (20-100)	1	107	-	0.01	[0.00; 0.06]	4.5%	
de Wit 2001 (30-59)	6	313	-		[0.01; 0.04]		
Grytdal 2016 (45-65)	7	360	-		[0.01; 0.04]		
Andersson 2017 (41-70)	86	3909		0.02			
Zhirakovskaja 2016 (16-100)	3	107	-	0.03			
Anderson 2011 (24-89)	18	620	+	0.03			
Nilsson 2000 (15-100)	23	750	4.	0.03			
Huhulescu 2008 (40-100)	- 4	130	-	0.03		4.6%	
Das 2013 (19-100)	598	16050		0.04	[0.03; 0.04]	5.3%	
Fernández 2010 (16-64)	29		*	0.04	[0.03; 0.06]		
Faruque 2009 (15-59)	177	4053		0.04	[0.04; 0.05]		
Uchida 2006 (15-100)	19	385	-	0.05	[0.03; 0.08]		
Tatte 2010 (19-100)	97	1380	*	0.07	[0.06; 0.09]		
Hilmarsdottir 2011 (30-83)	19	240	-	0.08	[0.05; 0.12]	4.9%	
Carvalho-Costa 2011 (30-60)	50	607	-	0.08	[0.06; 0.11]	5.1%	
Elhag 2013 (15-100)	18	198	-	0.09	[0.06; 0.14]		
Luchs 2014 (18-100)	197	2102	*	0.09	[0.08; 0.11]	5.3%	
Nakajima 2001 (18-100)	108	683	-	0.16	[0.13: 0.19]		
Kittigul 2014 (18-100)	27	131	-	0.21	[0.14; 0.29]	4.6%	
Amarilla 2007 (38-57)	52	201	-	0.26	[0.20; 0.33]	4.8%	
Overall Effect Prediction Interval Heterogeneity: $I^2 = 96\%$, $\tau^2 = 0$	0122 n	33035		0.06	[0.04; 0.09] [0.00; 0.22]	100.0%	
included only in a post in	O LEE, IN	- M-W I	0.05 0.15 0.25				
			0.00 0.10 0.20				



Non-WHO Diarrhea Definition: Broad Ages (5-100 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalenc	e Point Prev	95% CI	Weight
Atchison 2016 (5-100)	343	287724	w	0.00	[0.00; 0.00]	4.8%
Fletcher 2015 (13-24)	1	164		0.01		4.4%
Grytdal 2016 (5-25)	2	170	W-	0.01	The state of the s	4.4%
Andersson 2017 (11-40)	66	2200	. 6	0.03	The second section is a second second	
de Wit 2001 (5-29)		266	4-1	0.03		4.5%
de Wit 2001 (12-100)	8 5	107	-	0.05		4.2%
Chowdury 2005 (5-100)	283	5653			[0.04; 0.06]	4.8%
Huhulescu 2008 (5-39)	- 8	156		0.05		4.4%
Unal 2016 (11-20)	22	404	- Tel		0.04; 0.08	4.6%
Nayak 2018 (5-100)	44	728		0.06		4.7%
Carvalho-Costa 2011 (12-30)		459	4	0.06		
Bittencourt 2000 (5-100)	8	109	-	0.07		
Hilmarsdottir 2011 (5-29)	9	121	-	0.07	The second secon	
Degiuseppe 2016 (5-100)	275	3459	6	0.08	The second secon	
Thongprachum 2015 (5-100)		156			[0.05; 0.14]	4.4%
Tatte 2014 (10-100)	35	371	-		[0.07; 0.13]	4.6%
Nair 2010 (5-100)	181	1871			[0.08; 0.11]	4.8%
Nakamura 2016 (6-100)	35	309	-4-	0.11		4.6%
Jain 2016 (5-100)	24	176	-		[0.09; 0.20]	
Mladenova 2010 (5-100)	45	293			[0.12; 0.20]	4.6%
Barnes 1997 (5-100)	45	282	-		[0.12; 0.21]	4.6%
da Silva 2017 (5-100)	73	210	-		[0.28; 0.42]	4.5%
Overall Effect		305388	-	0.07	[0.04; 0.10]	100.0%
Prediction Interval		1977			[0.00; 0.25]	- F 77 F
Heterogeneity: $I^2 = 99\%$, $r^2 = 0$.	0150, p	= 0	1 1	1	0.150, 9.519	
	g J W.		0.1 0.2 0.3 0	1.4		



WHO Diarrhea Definition by Age Group



WHO Diarrhea Definition: Older Children and Adolescents (5-20 y.o.)

Study (Age Range)	Cases Denomin	ator	Rotavirus Prevalence	Point Prev	95% CI	Weight
Bingnan 1991 (5-10) Steenland 2013 (5-17) Breiman 2014 (5-17) Cheun 2010 (6-9) Hacimustafaoğlu 2011 (5-14) Podkolzin 2009 (5-14) Hasing 2009 (5-20)	9,00 44,00	419 231 664 2979 368 360 131		0.04 0.07 0.08 0.12 0.20	[0.00; 0.02] [0.02; 0.08] [0.05; 0.09] [0.07; 0.09] [0.09; 0.16] [0.16; 0.25] [0.16; 0.31]	14.4% 14.1% 14.5% 14.7% 14.3% 14.3% 13.6%
Overall Effect Prediction Interval Heterogeneity: $I^2 = 96\%$, $\tau^2 = 0.0$		5152	0.1 0.2 0.3 0.4	0.09	[0.03; 0.18] [0.00; 0.43]	100.0%



WHO Diarrhea Definition: Younger Adults (15-50 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence Po	int Prev	95% CI	Weight
Zhu 2013 (20-49) Gong 2018 (18-44) Breiman 2014 (18-49) Jia 2016 (18-40)	6 276 106 22	348 4173 1261 211		0.07 0.08	[0.01; 0.04] [0.06; 0.07] [0.07; 0.10] [0.07; 0.16]	26.7%
Overall Effect Prediction Interval Heterogeneity: $I^2 = 91\%$	$t^2 = 0.0$. 5993 3066, ρ < 0.01	0 0.05 0.15 0.25 0.35	0.06	[0.01; 0.14] [0.00; 0.36]	100.0%



WHO Diarrhea Definition: Older Adults (50-100 y.o.)

Study (Age Range)	Cases D	Denominator	Rot	avirus	Prev	alence	Point I	Prev	95% CI	Weight
Zhu 2013 (50-100) Cheun 2010 (50-100) Zhang 2017 (65-100) Breiman 2014 (50-100) Gong 2018 (60-100)	371 149 12 207	165 15394 3857 207 2345	-	*	-			0.02 0.04 0.06	[0.00; 0.06] [0.02; 0.03] [0.03; 0.05] [0.03; 0.10] [0.08; 0.10]	22.4% 22.1% 17.3%
Overall Effect Prediction Interval Heterogeneity: $I^2 = 98\%$.	$\tau^2 = 0.004$	21968 0. p < 0.01	0	0.05	0.1	0.15		0.04	[0.02; 0.08] [0.00; 0.18]	100.0%



WHO Diarrhea Definition: Broad Adult Ages (15-100 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight
Germani 1994 (15-100)	0.000	420	_	0.00	[0.00; 0.01]	7.8%
Steenland 2013 (18-65)	8.000	957		0.01	[0.00; 0.02]	8.0%
Stroni 2014 (15-100)	64,000	1000		0.06	[0.05; 0.08]	8.0%
Wang 2009 (15-100)	83.000	1088	-	0.08	[0.06; 0.09]	
Podkolzin 2009 (18-100)	111.028	1354	_	The second secon	[0.07; 0.10]	
Shen 2013 (15-100)	138,000		W		[0.08; 0.11]	
Gong 2018 (44-59)	231.000	The state of the s			[0.09; 0.12]	
Wang 2017 (15-100)	48.000		(-6-1	157 57	10.08; 0.141	
Jansen 2008 (18-100)	12.000	104			[0.06; 0.20]	
Wang 2011 (15-90)	96.000	795	-		[0.10; 0.15]	8.0%
Jia 2016 (41-60)	13.000				[0.07; 0.21]	
Bresee 2012 (18-91)	19.000	106	-		[0.11; 0.27]	
Hasing 2009 (20-100)	26.000	118			[0.15; 0.31]	
Overall Effect		10228		0.08	[0.05; 0.13]	100.0%
Prediction Interval Heterogeneity: I ² = 97%, τ	² = 0.0158	p < 0.01			[0.00; 0.30]	
Transfer of Post of		7-5-6-0-3	0.05 0.15 0.25			



WHO Diarrhea Definition: Broad Ages (5-100 y.o.)

Study (Age Range)	Cases	Denominator	Rotavirus Prevalence	Point Prev	95% CI	Weight
Bingnan 1991 (10-100) Cheun 2010 (10-49) Lahon 2013 (11-100) Zhang 2016 (5-100) Zhang 2017 (5-65) Konca 2014 (5-100)	345 56 20 17 52	1951 12216 951 271 224 583	-	0.03 0.06 0.07 0.08	[0.01; 0.02] [0.03; 0.03] [0.05; 0.08] [0.05; 0.11] [0.05; 0.12] [0.07; 0.12]	The Control of the Control
Jain 2016 (5-100) Overall Effect Prediction Interval Heterogeneity: /2 = 97%,	$\tau^2 = 0.00$	360 16556 081, p < 0.01	0.05 0.1 0.15 0.2		[0.11; 0.18] [0.03; 0.11] [0.00; 0.23]	

