

THE LANCET Infectious Diseases

Supplementary webappendix

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Supplement to: GBD 2017 Non-Typhoidal Salmonella Invasive Disease Collaborators.
The global burden of non-typhoidal salmonella invasive disease: a systematic analysis
for the Global Burden of Disease Study 2017. *Lancet Infect Dis* 2019; published online
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A. Methods Appendix

A1: GBD Locations

GBD uses a set of hierarchically nested geographies for both analysis and reporting. Seven super-regions are nested within the world (Global); 21 regions are nested within the super-regions; and 195 countries and territories are nested inside of regions. Figure S1 below shows the super-regions and region. Note that North Africa and Middle East, and South Asia are treated as both super-regions and regions (i.e. each of these super-regions has only one region nested within it). All other super-regions contain between three and five regions.



Figure S1: GBD regions and super-regions

A2. Systematic Review

We searched through 1) scientific databases including PubMed (including MEDLINE), Scopus, Web of Science, Western Pacific Region Index Medicus, The Cochrane Library, LILACS, OVID, ANU Super Search, Google Scholar, University of Washington library; 2) grey literature databases including Open Access Theses and Dissertations, Dart Europe, Open Doar, OAster, OpenGrey, and The World Health Organization (WHO) library; 3) other grey literature sources including the websites of WHO, European Food and Safety Authority, U.S. Food and Drug Administration, Health Canada, Centers for Disease Control and Prevention, The International Centre for Diarrhoeal Disease Research in Bangladesh, The International Vaccine Institute; and the National Institutes of Health Research Portfolio Online Reporting Tools. Reference list search of eligible studies was also performed.

Search strategies were discussed with a librarian using key terminology from primary studies and were specifically tailored for each database (Table S1). We included all studies published between January 1980 and July 19 2017 which reported information on iNTS within at least one of the following categories: incidence, case fatality rate, and risk factors including co-infections with HIV and malaria. We defined iNTS disease as individuals with laboratory confirmed iNTS infection including bloodstream infection, meningitis, or infection of other normally sterile site. All original study designs were included in the review except for editorial letters, case studies, and reviews. No language restrictions were applied.

Identified studies were imported into Endnote X7 and undergone several stages of independent screening by two authors (AP and KS), with any discrepancies discussed with a third author (JDS). The list of inclusion and exclusion criteria for each stage of the systematic review is presented in Table S2. Backward citation screening of eligible studies was also performed. Studies published in languages other than English were reviewed by the researchers familiar with those languages (French, AP and JDS), Spanish (AP), Polish (AP), Czech (AP), and Chinese (JC). Flow diagram of eligible studies is depicted in Figure S2.

Data from included studies was extracted by two authors (AP and JDS) using the Institute for Health Metrics and Evaluation (IHME) extraction tool. Among others, this included data on location, time period, data source type, case definition, case diagnostics, type of measure, sample size, age, sex, representativeness, and urbanicity. Studies reporting incidence or mortality were population-based studies with a clearly defined denominator. We also considered hospital-based studies with a clearly defined catchment population. Where studies reported total sample size and age-specific incidence rates, but not age-specific sample size, we assumed the age distribution of the sample matched that of the population. Where detailed (eg, age-specific rates) data were presented in graphs, we extracted data from graphs using WebPlotDigitizer, version 3.8 (Ankit Rohatgi, Austin Texas). Studies reporting the case fatality rate were included if they were based on ≥ 10 cases.

We included studies presenting data on iNTS-malaria coinfection in our systematic review and extraction with the intention of estimating relative risks comparing iNTS incidence between those with and without malaria. Upon inspection, we found the data too limited to support this analysis and did not use the data on iNTS-malaria coinfection for this study. Data on other components of the analysis (i.e. incidence, case fatality, and HIV coinfection) from studies presenting malaria coinfection data were retained.

Table S1: Search strategies

PubMed (n=817)
(salmonella OR salmonellosis) AND (nontyph* OR non-typh* OR typhimurium OR enteritidis OR Newport OR Heidelberg) AND (bacteriaemi* OR bacteremi* OR septicaemi* OR septicemi* OR septic OR sepsis OR "blood isolate" OR bloodstream OR invasive) AND (infant OR child OR children OR adolescent OR adult OR patient OR human OR community OR participant OR volunteer OR subject OR incidence OR hospital OR men OR women OR man OR woman) AND (incidence OR prevalence OR burden OR proportion OR "fatality rate" OR "fatality ratio" OR predictor OR determinant OR "risk factor" OR "risk group" OR "at risk" OR environment OR climate OR foodborne OR "food borne" OR zoonosis OR zoonotic OR animal OR waterborne OR "water borne" OR soil OR "land use" OR flood OR drought OR earthquake OR mountain OR "drinking water" OR sanitation OR ecology OR ecological OR "sanitation condition" OR epidemic OR outbreak OR reservoir OR HIV OR "human immunodeficiency virus" OR AIDS OR malaria OR anemia OR anaemia OR malnutrition OR undernutrition OR malnourished) restricted to humans, from 1/1/1980 to 19/07/2017

Web of Science (n=837)

TS=((salmonella OR salmonellosis) AND (nontyph* OR non-typh* OR typhimurium OR enteritidis OR Newport OR Heidelberg) AND (bacteraemi* OR bacteremi* OR septicaemi* OR septicemi* OR septic OR sepsis OR blood isolate OR bloodstream OR invasive) AND (infant OR child OR children OR adolescent OR adult OR patient OR human OR community OR participant OR volunteer OR subject OR incidence OR hospital OR men OR women OR man OR woman) AND (incidence OR prevalence OR burden OR proportion OR "fatality rate" OR "fatality ratio" OR predictor OR determinant OR "risk factor" OR "risk group" OR "at risk" OR environment OR climate OR foodborne OR "food borne" OR zoonosis OR zoonotic OR animal OR waterborne OR "water borne" OR soil OR "land use" OR flood OR drought OR earthquake OR mountain OR "drinking water" OR sanitation OR ecology OR ecological OR "sanitation condition" OR epidemic OR outbreak OR reservoir OR HIV OR "human immunodeficiency virus" OR AIDS OR malaria OR anemia OR anaemia OR malnutrition OR undernutrition OR malnourished))

Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI, CCR-EXPANDED, IC Timespan=1990-2017

Scopus (n=1237)

TITLE-ABS-KEY ((salmonella OR salmonellosis) AND (nontyph* OR non-typh* OR typhimurium OR enteritidis OR newport OR heidelberg) AND (bacteraemi* OR bacteremi* OR septicaemi* OR septicemi* OR septic OR sepsis OR "blood isolate" OR bloodstream OR invasive) AND (infant OR child OR children OR adolescent OR adult OR patient OR human OR community OR participant OR volunteer OR subject OR incidence OR hospital OR men OR women OR man OR woman) AND (incidence OR prevalence OR burden OR proportion OR "fatality rate" OR "fatality ratio" OR predictor OR determinant OR "risk factor" OR "risk group" OR "at risk" OR environment OR climate OR foodborne OR "food borne" OR zoonosis OR zoonotic OR animal OR waterborne OR "water borne" OR soil OR "land use" OR flood OR drought OR earthquake OR mountain OR "drinking water" OR sanitation OR ecology OR ecological OR "sanitation condition" OR epidemic OR outbreak OR reservoir OR hiv OR "human immunodeficiency virus" OR aids OR malaria OR anemia OR anaemia OR malnutrition OR undernutrition OR malnourished)) AND (LIMIT-TO(PUBYEAR , 2017) OR LIMIT-TO(PUBYEAR , 2016) OR LIMIT-TO(PUBYEAR , 2015) OR LIMIT-TO(PUBYEAR , 2014) OR LIMIT-TO(PUBYEAR , 2013) OR LIMIT-TO(PUBYEAR , 2012) OR LIMIT-TO(PUBYEAR , 2011) OR LIMIT-TO(PUBYEAR , 2010) OR LIMIT-TO(PUBYEAR , 2009) OR LIMIT-TO(PUBYEAR , 2008) OR LIMIT-TO(PUBYEAR , 2007) OR LIMIT-TO(PUBYEAR , 2006) OR LIMIT-TO(PUBYEAR , 2005) OR LIMIT-TO(PUBYEAR , 2004) OR LIMIT-TO(PUBYEAR , 2003) OR LIMIT-TO(PUBYEAR , 2002) OR LIMIT-TO(PUBYEAR , 2001) OR LIMIT-TO(PUBYEAR , 2000) OR LIMIT-TO(PUBYEAR , 1999) OR LIMIT-TO(PUBYEAR , 1998) OR LIMIT-TO(PUBYEAR , 1997) OR LIMIT-TO(PUBYEAR , 1996) OR LIMIT-TO(PUBYEAR , 1995) OR LIMIT-TO(PUBYEAR , 1994) OR LIMIT-TO(PUBYEAR , 1993) OR LIMIT-TO(PUBYEAR , 1992) OR LIMIT-TO(PUBYEAR , 1991) OR LIMIT-TO(PUBYEAR , 1990) OR LIMIT-TO(PUBYEAR , 1989) OR LIMIT-TO(PUBYEAR , 1988) OR LIMIT-TO(PUBYEAR , 1987) OR LIMIT-TO(PUBYEAR , 1986) OR LIMIT-TO(PUBYEAR , 1985) OR LIMIT-TO(PUBYEAR , 1984) OR LIMIT-TO(PUBYEAR , 1983) OR LIMIT-TO(PUBYEAR , 1982) OR LIMIT-TO(PUBYEAR , 1981) OR LIMIT-TO(PUBYEAR , 1980))

WPRIM (n=42)

Limits: 1980-2017; Humans

All:Salmonella or All:Salmonellosis

Lilacs (n=37)

((tw:((salmonella OR salmonellosis) AND (nontyph* OR non-typh* OR typhimurium OR enteritidis OR newport OR heidelberg) AND (bacteraemi* OR bacteremi* OR septicaemi* OR septicemi* OR septic OR sepsis OR "blood isolate" OR invasive)) AND (instance:"regional") AND (collection:"01-internacional") AND db:"LILACS") AND year_cluster:"1992" OR "1995" OR "2011" OR "1990" OR "2003" OR "2010" OR "2012" OR "2014" OR "2000" OR "2004" OR "2006" OR "2009" OR "2013" OR "1991" OR "1994" OR "1996" OR "2002" OR "2007" OR "2016" OR "1997" OR "1998" OR "1999" OR "2015" OR "2017" OR "2004" OR "2005" OR "2008" OR "1980" OR "1981" OR "1982" OR "1983" OR "1984" OR "1985" OR "1986" OR "1987" OR "1988" OR "1989")))) AND (limit:"humans"))

Cochrane (n=11)

(salmonella OR salmonellosis) AND (nontyph* OR non-typh* OR typhimurium OR enteritidis OR Newport OR Heidelberg) AND (bacteraemi* OR bacteremi* OR septicaemi* OR septicemi* OR septic OR sepsis OR "blood isolate" OR bloodstream OR invasive) AND (infant OR child OR children OR adolescent OR adult OR patient OR human OR community OR participant OR volunteer OR subject OR incidence OR hospital OR men OR women OR man OR woman) AND (incidence OR prevalence OR burden OR proportion OR "fatality rate" OR "fatality ratio" OR predictor OR determinant OR "risk factor" OR "risk group" OR "at risk" OR environment OR climate OR foodborne OR "food borne" OR zoonosis OR zoonotic OR animal OR waterborne OR "water borne" OR soil OR "land use" OR flood OR drought OR earthquake OR mountain OR "drinking water" OR sanitation OR ecology OR ecological OR "sanitation condition" OR epidemic OR outbreak OR reservoir OR HIV OR "human immunodeficiency virus" OR AIDS OR malaria OR anemia OR anaemia OR malnutrition OR undernutrition OR malnourished)

Publication Year from 1980 to 2017, in Cochrane Reviews (Reviews and Protocols), Other Reviews, Trials, Methods Studies, Technology Assessments, Economic Evaluations and Cochrane Groups (Word variations have been searched)

ANU Super Search (n=804)

Filter: 1/1/1980 – 19/7/2017, add results beyond your library collection

(Abstract:(salmonella OR salmonellosis)) AND (Abstract:(nontyph* OR non-typ* OR typhimurium OR enteritidis OR newport OR heidelberg)) AND (Abstract:(bacteriaem* OR bacteremi* OR septicaem* OR septicem* OR septic OR sepsis OR "blood isolate" OR bloodstream OR invasive)) AND (infant OR child OR children OR adolescent OR adult OR patient OR human OR community OR participant OR volunteer OR subject OR incidence OR hospital OR men OR women OR man OR woman) AND (incidence OR prevalence OR burden OR proportion OR "fatality rate" OR "fatality ratio" OR predictor OR determinant OR "risk factor" OR "risk group" OR "at risk" OR environment OR climate OR foodborne OR "food borne" OR zoonosis OR zoonotic OR animal OR waterborne OR "water borne" OR soil OR "land use" OR flood OR drought OR earthquake OR mountain OR "drinking water" OR sanitation OR ecology OR ecological OR "sanitation condition" OR epidemic OR outbreak OR reservoir OR HIV OR "human immunodeficiency virus" OR AIDS OR malaria OR anemia OR anaemia OR malnutrition OR undernutrition OR malnourished)

Excluded: veterinary medicine, economics, physics, engineering, forestry, mathematics, dentistry, zoology, botany, agriculture,

Google Scholar (n=510)

(salmonella OR salmonellosis) AND (nontyph* OR non-typ* OR typhimurium OR enteritidis OR newport OR heidelberg) AND (bacteriaem* OR bacteremi* OR septicaem* OR septicem* OR septic OR sepsis OR bloodstream OR "blood isolate" OR invasive)
Filter: 1980 - 2017

Ovid (n=216)

((salmonella or salmonellosis) and (nontyph* or non-typ* or typhimurium or enteritidis or newport or heidelberg) and (bacteriaem* or bacteremi* or septicaem* or septicem* or septic or sepsis or bloodstream or "blood isolate" or invasive) and (infant or child or children or adolescent or adult or patient or human or community or participant or volunteer or subject or incidence or hospital or men or women or man or woman) and (incidence or prevalence or burden or proportion or "fatality rate" or "fatality ratio" or predictor or determinant or "risk factor" or "risk group" or "at risk" or environment or climate or foodborne or "food borne" or zoonosis or zoonotic or animal or waterborne or "water borne" or soil or "land use" or flood or drought or earthquake or mountain or "drinking water" or sanitation or ecology or ecological or "sanitation condition" or epidemic or outbreak or reservoir or HIV or "human immunodeficiency virus" or AIDS or malaria or anemia or anaemia or malnutrition or undernutrition or malnourished)).mp. [mp=title, abstract, full text, caption text]
Limit 1 to yr="1980-Current"

OATD (n=31)

(salmonella OR salmonellosis) AND (nontyph* OR non-typ* OR typhimurium OR enteritidis OR newport OR heidelberg) AND (bacteriaem* OR bacteremi* OR septicaem* OR septicem* OR septic OR sepsis OR bloodstream OR "blood isolate" OR invasive) AND (infant OR child OR children OR adolescent OR adult OR patient OR human OR community OR participant OR volunteer OR subject OR incidence OR hospital OR men OR women OR man OR woman) AND (incidence OR prevalence OR burden OR proportion OR "fatality rate" OR "fatality ratio" OR predictor OR determinant OR "risk factor" OR "risk group" OR "at risk" OR environment OR climate OR foodborne OR "food borne" OR zoonosis OR zoonotic OR animal OR waterborne OR "water borne" OR soil OR "land use" OR flood OR drought OR earthquake OR mountain OR "drinking water" OR sanitation OR ecology OR ecological OR "sanitation condition" OR epidemic OR outbreak OR reservoir OR HIV OR "human immunodeficiency virus" OR AIDS OR malaria OR anemia OR anaemia OR malnutrition OR undernutrition OR malnourished)

Dart Europe (n=8)

(salmonella OR salmonellosis) AND (nontyph* OR non-typ* OR typhimurium OR enteritidis OR newport OR heidelberg) AND (bacteriaem* OR bacteremi* OR septicaem* OR septicem* OR septic OR sepsis OR bloodstream OR "blood isolate" OR invasive) AND (infant OR child OR children OR adolescent OR adult OR patient OR human OR community OR participant OR volunteer OR subject OR incidence OR hospital OR men OR women OR man OR woman) AND (incidence OR prevalence OR burden OR proportion OR "fatality rate" OR "fatality ratio" OR predictor OR determinant OR "risk factor" OR "risk group" OR "at risk" OR environment OR climate OR foodborne OR "food borne" OR zoonosis OR zoonotic OR animal OR waterborne OR "water borne" OR soil OR "land use" OR flood OR drought OR earthquake OR mountain OR "drinking water" OR sanitation OR ecology OR ecological OR "sanitation condition" OR epidemic OR outbreak OR reservoir OR HIV OR "human immunodeficiency virus" OR AIDS OR malaria OR anemia OR anaemia OR malnutrition OR undernutrition OR malnourished)

Open Doar (n=0)

Salmonella

OAISTER (n=7)

kw:salmonella OR salmonellosis) AND (nontyph* OR non-typ* OR typhimurium OR enteritidis OR newport OR heidelberg) AND (bacteriaem* OR bacteremi* OR septicaem* OR septicem* OR septic OR sepsis OR bloodstream OR "blood isolate" OR invasive) AND (infant OR child OR children OR adolescent OR adult OR patient OR human OR community OR participant OR volunteer OR subject OR incidence OR hospital OR men OR women OR man OR woman) AND (incidence OR prevalence OR burden OR proportion OR "fatality rate" OR "fatality ratio" OR predictor OR determinant OR "risk factor" OR "risk group" OR "at risk" OR environment OR climate OR foodborne OR "food borne" OR zoonosis OR zoonotic OR animal OR waterborne OR "water borne" OR soil OR "land use" OR flood OR drought OR earthquake OR mountain OR "drinking water" OR sanitation OR ecology OR ecological OR "sanitation condition" OR epidemic OR outbreak OR reservoir OR HIV OR "human immunodeficiency virus" OR AIDS OR malaria OR anemia OR anaemia OR malnutrition OR undernutrition OR malnourished)

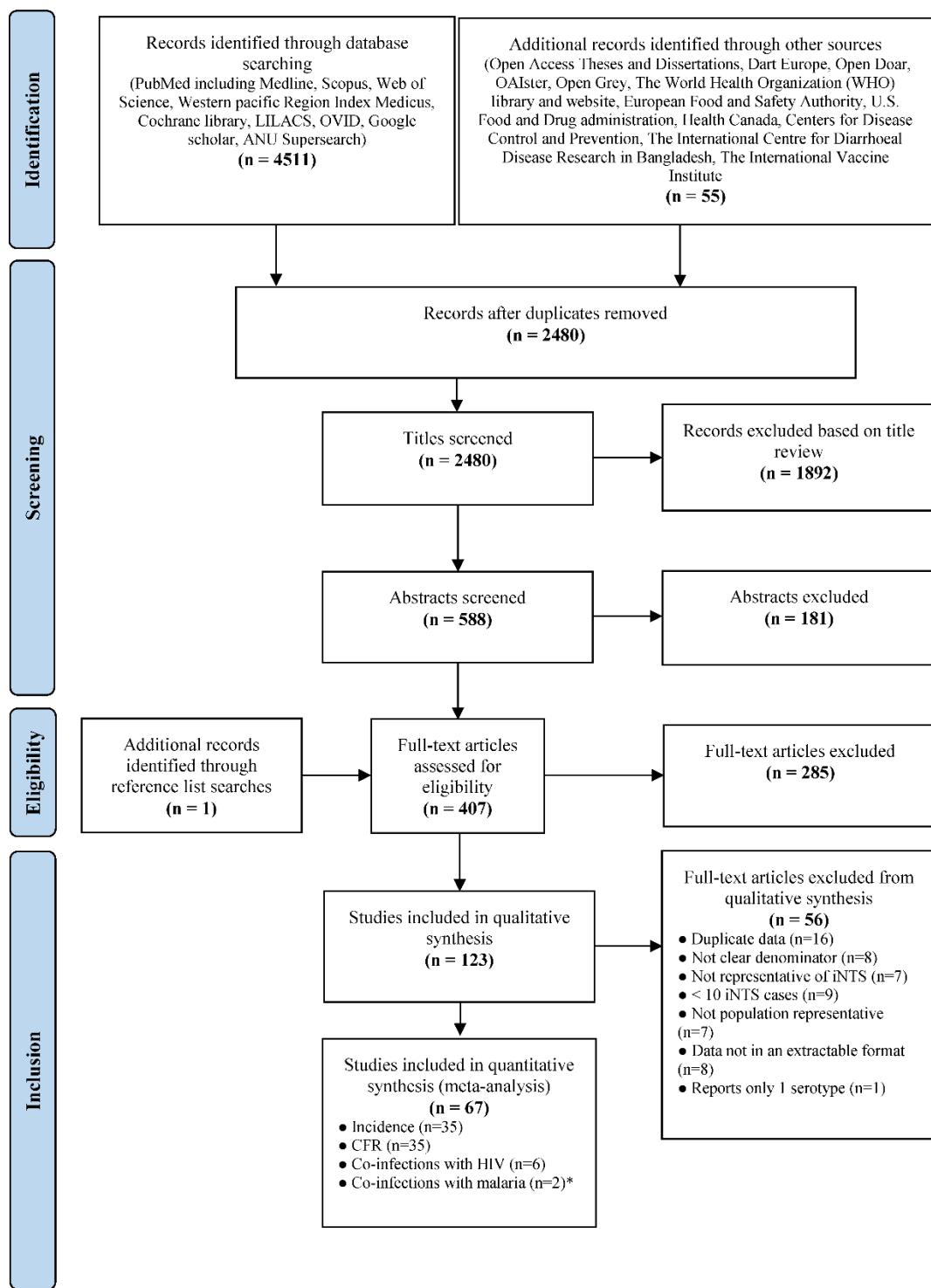
Limited to:1980 – 2017

Open Grey (n=9)

(salmonella OR salmonellosis) AND (nontyph* OR non-typ* OR typhimurium OR enteritidis OR newport OR heidelberg) AND (bacteriaem* OR bacteremi* OR septicaem* OR septicem* OR septic OR sepsis OR bloodstream OR "blood isolate" OR invasive)

Table S2: Inclusion and exclusion criteria at each stage of the review process

	Inclusion criteria	Exclusion criteria
Title selection	The primary study outcome is related to nontyphoidal <i>Salmonella</i> (NTS). Study is published from 1980 onwards.	Study outcome is related to <i>Salmonella typhi</i> or <i>Salmonella paratyphi A, B, or C</i> . Study is related to animal NTS isolates. Study is published before 1980. Study focuses on analysis of gene, protein or molecular factors related to <i>Salmonella</i> .
Abstract selection	Study reports on invasive nontyphoidal <i>Salmonella</i> (iNTS) disease defined as laboratory confirmed human NTS infection with samples coming from blood, cerebrospinal fluid, synovial fluid, or other normally sterile site. Study is an original article (case-control study, cohort study, outbreak investigation, case-series, survey, or thesis)	Study reports on NTS enterocolitis or data is based on the analysis of NTS coming from stool, urine, abscess, wounds, skin, or other non-sterile sites. Study is not an original research article (editorial letter, comments). Study is a review.
Full-text selection – qualitative synthesis	Study reports iNTS incidence, case fatality rate/mortality, and risk factors including co-infections with HIV and malaria.	Study does not provide a clear denominator. Study does not provide data in an extractable format. Study uses duplicate data. Study is not representative of iNTS. Study is not population representative. Study is based on less than 10 iNTS cases. Study reports only specific iNTS serovar.
Full-text selection – quantitative synthesis	Study reporting incidence or mortality is population-based study with a clearly defined denominator, or it is a hospital-based study with a clearly defined catchment population. Study is based on >10 iNTS cases. Study provides data in an extractable format.	



*Data on malaria coinfection were extracted, but not used in the current analysis (see section A2).

Figure S2: Systematic review flow chart

A3. Overview of modelling process

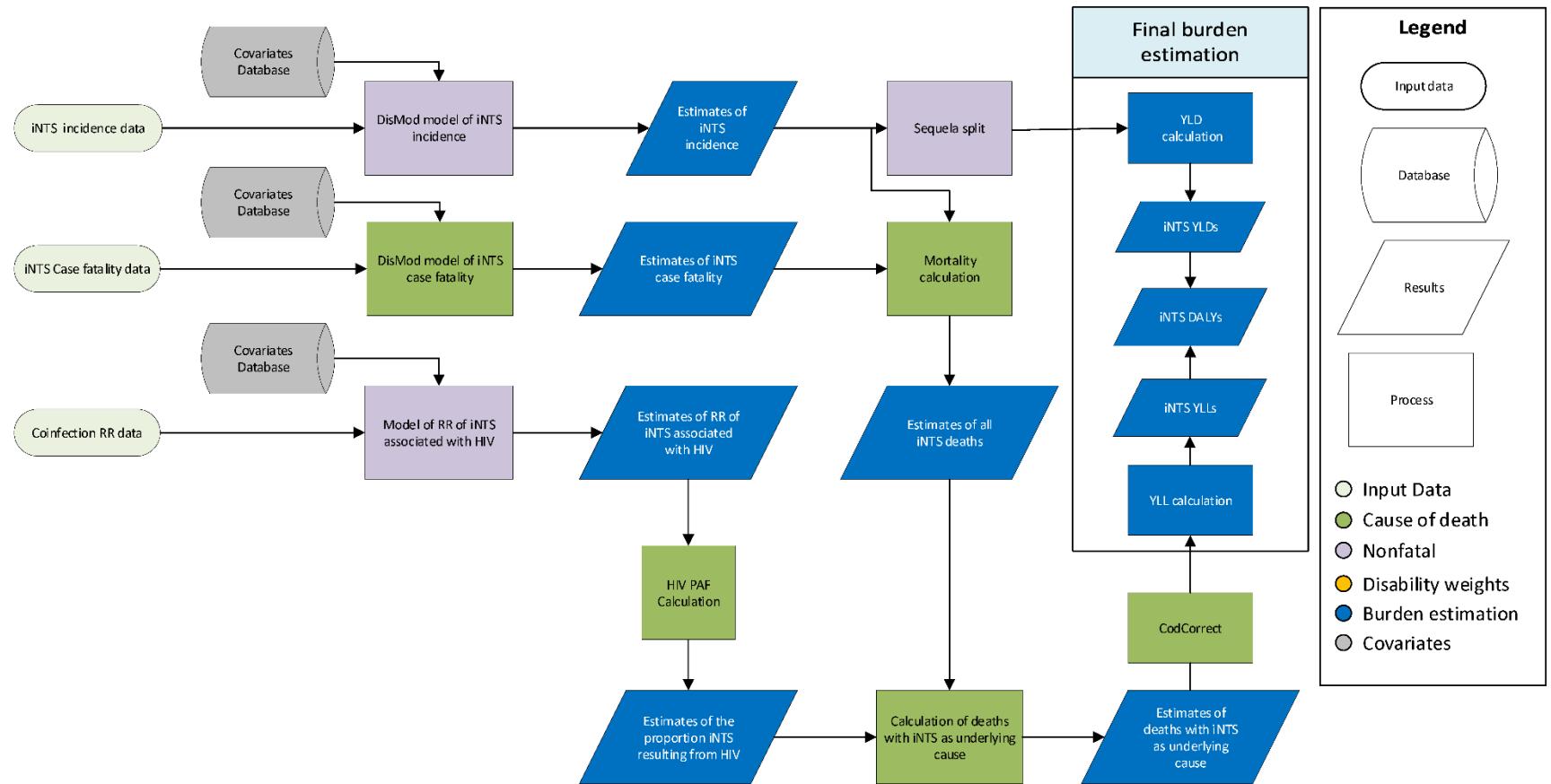


Figure S3: Flow diagram of modelling process

A4. CodCorrect

Within the GBD study, we impose two constraints on estimates of cause-specific mortality to ensure consistency: 1) each death has one underlying cause, and 2) all cause-specific mortality estimates must sum to equal total all-cause mortality within every location, year, sex, and age group. CoDCorrect is the hierarchical rescaling process that we use to impose the second constraint, and it has been previously described in detail.¹ In general, cause-specific mortality estimates will have greater uncertainty in locations and years where we have less cause-specific mortality data. Where the estimates are less certain, the aggregated cause-specific estimates are likely to deviate more greatly from the all-cause mortality estimate, and the effect of CoDCorrect is likely to be more pronounced. Note that data sparsity here, refers not just to data on iNTS, but to data on all causes of death. Conversely, where cause-specific mortality data are nearly complete (i.e. where the underlying cause is known for nearly every death), we expect the aggregated cause-specific estimates to nearly match the all-cause mortality estimate, and expect CoDCorrect to have a negligible effect on the final estimates. In the case of iNTS most deaths occurred in those locations for which very little data are available across all years (e.g. countries of Eastern, Central, and Western sub-Saharan Africa). Because the absence of cause-specific mortality data is relatively constant across time in these countries, trends in the effect of CoDCorrect on iNTS are more difficult to explain. Broadly, as it relates to locations with a large iNTS burden, the effects of CoDCorrect result from cause-specific models (across the full spectrum of GBD causes) having had the tendency to produce over-estimates that required adjustment downward to fit within the all-cause mortality envelope in earlier years; and having had the tendency to produce under-estimates that required adjustment upward to fill the all-cause mortality envelope in later years.

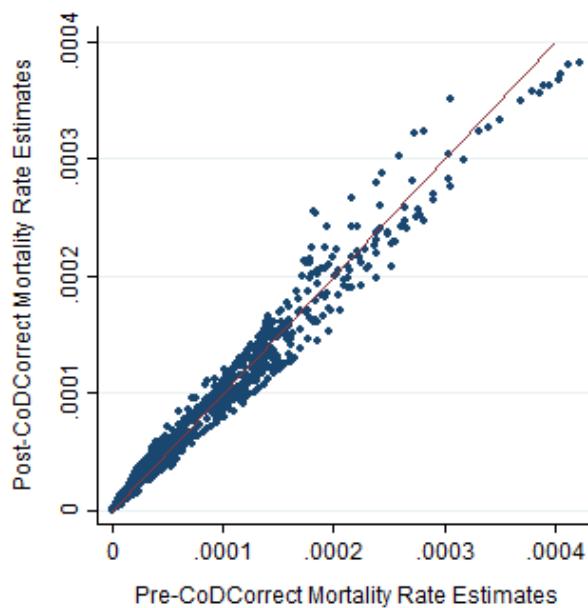


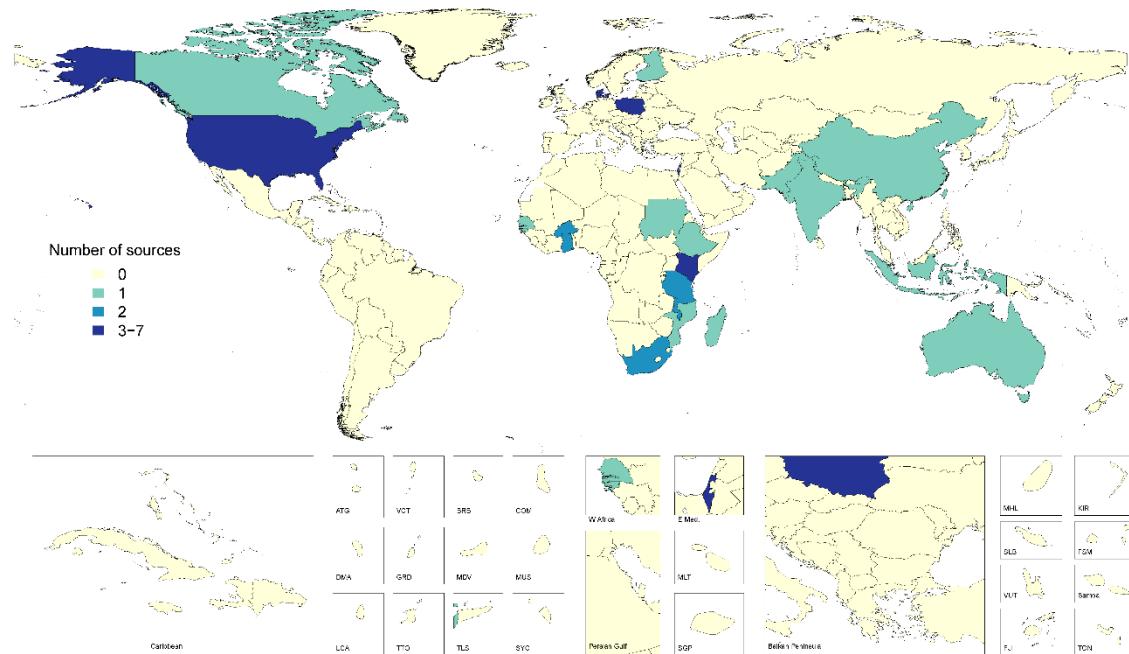
Figure S4: Comparison of iNTS mortality rate estimates before and after CoDCorrect, for each country and year. The red line shows equality (ie. points falling on this line were unchanged by CoDCorrect).

Table S3: Comparison of global estimates of iNTS deaths before and after CoDCorrect, by year

Year	Pre-CodCorrect	Post-CodCorrect	Absolute Change	Percent Change
1990	45,965	42,782	-3,182	-6.90%
1995	51,167	48,580	-2,588	-5.10%
2000	62,646	59,058	-3,588	-5.70%
2005	80,594	74,809	-5,785	-7.20%
2010	70,284	67,563	-2,721	-3.90%
2015	57,503	61,679	4,176	7.30%
2017	53,645	59,066	5,421	10.10%

B. Supplemental results

A)



B)

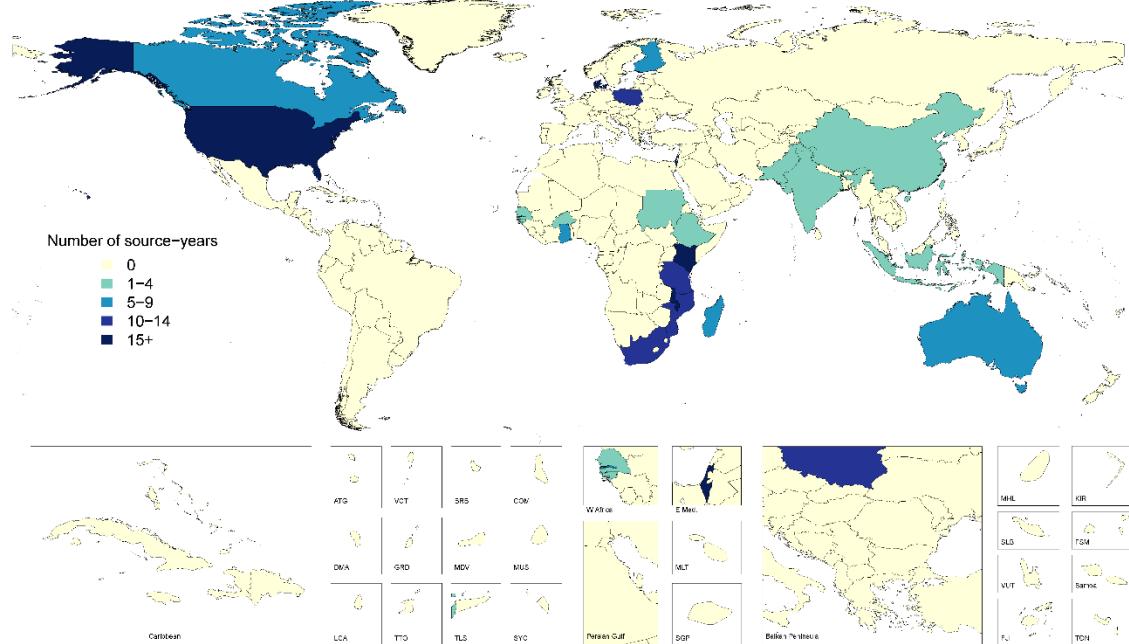


Figure S5: The number of incidence data sources, by country, excluding vital registration sources (A), and the number of source-years, by country, including vital registration sources (B). Source-years are calculated for each location as the sum of the number of years of observation across all sources.

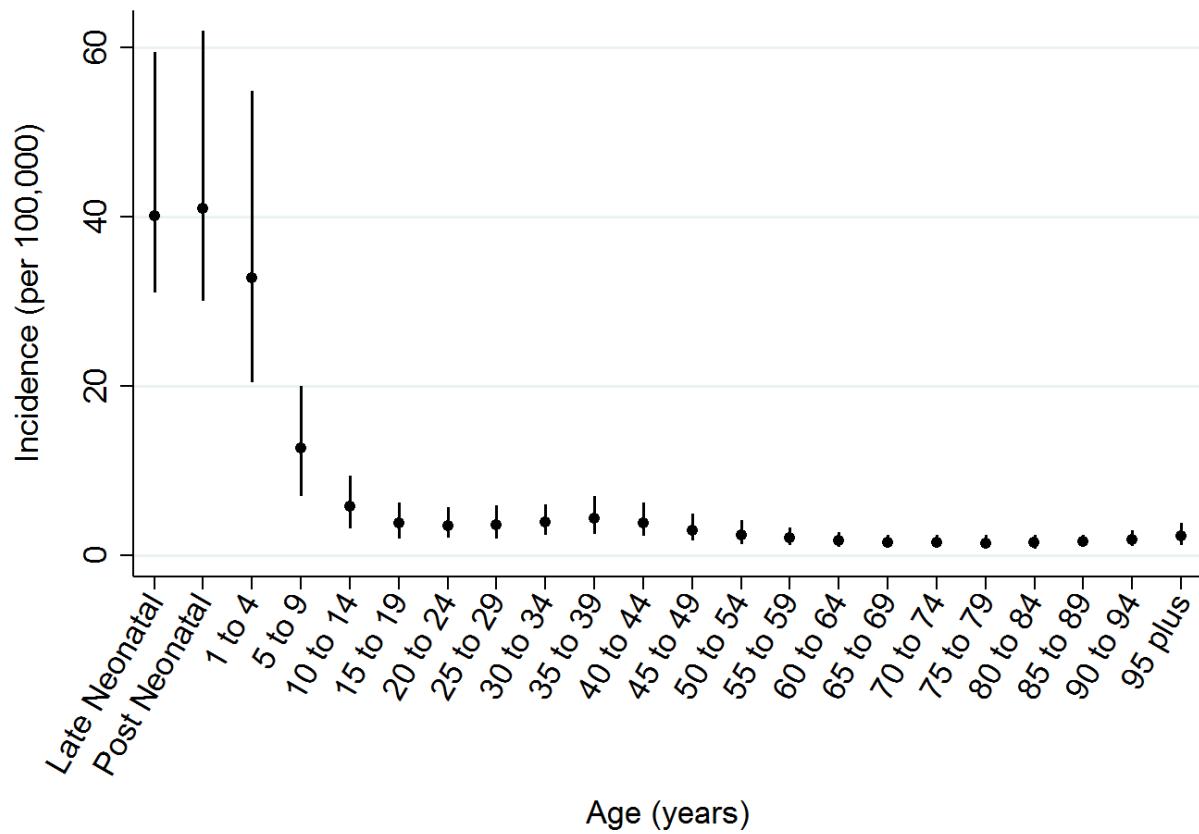


Figure S6: Global incidence by age in 2017. 95% Uncertainty intervals are shown.

Table S4: iNTS case fatality, with 95% uncertainty intervals, among those living with and without HIV, and the total population, by year, super-region, age, and sex. Rates are age-standardized, except for age-specific estimates.

	Total case-fatality (%)		Case fatality among HIV- (%)		Case fatality among HIV+ (%)	
	All-age / Age-specific	Age-standardized	All-age/Age-specific	Age-standardized	All-age/Age-specific	Age-standardized
Year						
1990	15.16 (9.37, 22.21)	15.93 (9.85, 23.35)	13.18 (7.83, 19.73)	13.69 (8.08, 20.73)	49.92 (37.36, 62.07)	50.39 (37.83, 62.46)
1995	16.21 (10.31, 23.29)	16.87 (10.70, 24.14)	12.98 (7.81, 19.39)	13.43 (8.03, 20.08)	49.12 (36.65, 61.27)	49.60 (37.13, 61.67)
2000	16.63 (10.60, 23.82)	16.96 (10.81, 24.25)	12.73 (7.64, 19.17)	13.03 (7.81, 19.58)	48.69 (36.27, 60.82)	49.10 (36.68, 61.17)
2005	15.64 (9.98, 22.39)	15.66 (9.95, 22.38)	12.09 (7.32, 18.11)	12.23 (7.39, 18.26)	47.53 (35.22, 59.65)	47.82 (35.51, 59.91)
2010	14.63 (9.24, 21.23)	14.47 (9.11, 21.02)	11.87 (7.23, 17.81)	11.88 (7.24, 17.80)	45.45 (33.33, 57.58)	45.60 (33.47, 57.73)
2017	14.52 (9.18, 21.06)	14.18 (8.99, 20.65)	12.03 (7.35, 17.99)	11.97 (7.31, 17.89)	41.82 (30.03, 53.97)	41.82 (29.98, 54.02)
Super-region						
Southeast Asia, East Asia, & Oceania	8.25 (4.77, 12.79)	7.44 (4.31, 11.69)	7.66 (4.35, 12.08)	7.02 (4.00, 11.19)	31.77 (21.09, 43.86)	30.75 (19.76, 43.35)
Central Europe, Eastern Europe, & Central Asia	9.36 (5.21, 14.87)	7.86 (4.33, 12.67)	8.49 (4.59, 13.97)	7.15 (3.89, 11.73)	30.58 (19.93, 42.64)	27.50 (16.97, 40.00)
High-income	12.74 (6.87, 20.31)	8.18 (4.35, 13.52)	8.07 (3.69, 15.00)	5.18 (2.52, 9.28)	30.46 (18.85, 43.15)	23.92 (13.76, 36.46)
Latin America & Caribbean	9.38 (5.55, 14.21)	9.26 (5.46, 13.99)	7.75 (4.40, 12.31)	7.75 (4.41, 12.23)	32.06 (21.05, 44.52)	32.14 (21.05, 44.67)
North Africa & Middle East	10.50 (6.06, 16.28)	11.04 (6.33, 17.12)	10.37 (5.94, 16.15)	10.91 (6.24, 17.02)	36.10 (24.61, 48.62)	36.96 (25.41, 49.44)
South Asia	9.57 (5.61, 14.74)	10.15 (5.90, 15.61)	9.31 (5.41, 14.45)	9.89 (5.69, 15.26)	36.50 (24.79, 49.19)	37.36 (25.67, 49.89)
Sub-Saharan Africa	15.81 (10.01, 22.89)	19.38 (12.29, 27.70)	12.94 (7.98, 19.26)	14.69 (8.69, 22.30)	43.84 (31.93, 55.90)	45.46 (33.72, 57.13)
Age						
Under 5	13.50 (8.37, 19.75)	-	13.38 (8.31, 19.52)	-	43.87 (31.97, 55.90)	-
5-14 years	9.25 (5.62, 14.13)	-	8.77 (5.30, 13.40)	-	38.50 (26.29, 51.51)	-
15-49 years	15.38 (9.54, 22.79)	-	8.86 (4.68, 15.15)	-	36.90 (25.65, 49.02)	-
50-69 years	32.87 (22.97, 44.25)	-	24.92 (14.86, 38.28)	-	57.55 (47.01, 66.98)	-
70+ years	51.20 (30.15, 72.93)	-	45.03 (23.71, 70.50)	-	75.71 (57.98, 88.14)	-
Sex						
Males	14.39 (9.09, 21.18)	14.19 (8.94, 20.90)	12.04 (7.33, 18.18)	12.04 (7.35, 18.22)	41.89 (30.11, 54.03)	41.98 (30.14, 54.16)
Females	14.65 (9.27, 21.09)	14.20 (9.00, 20.55)	12.03 (7.34, 17.78)	11.91 (7.29, 17.65)	41.75 (29.94, 53.92)	41.67 (29.83, 53.89)

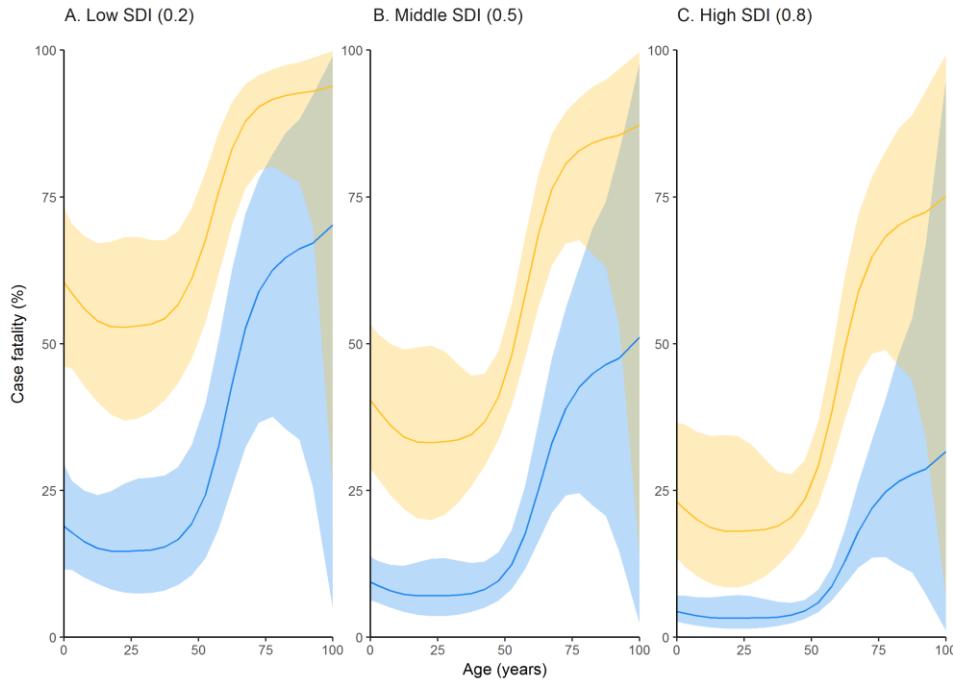


Figure S7: Case fatality among those with HIV (yellow), and those without HIV (blue), by age and sociodemographic index (SDI). Lines show point estimates, and shaded areas show 95% uncertainty intervals.

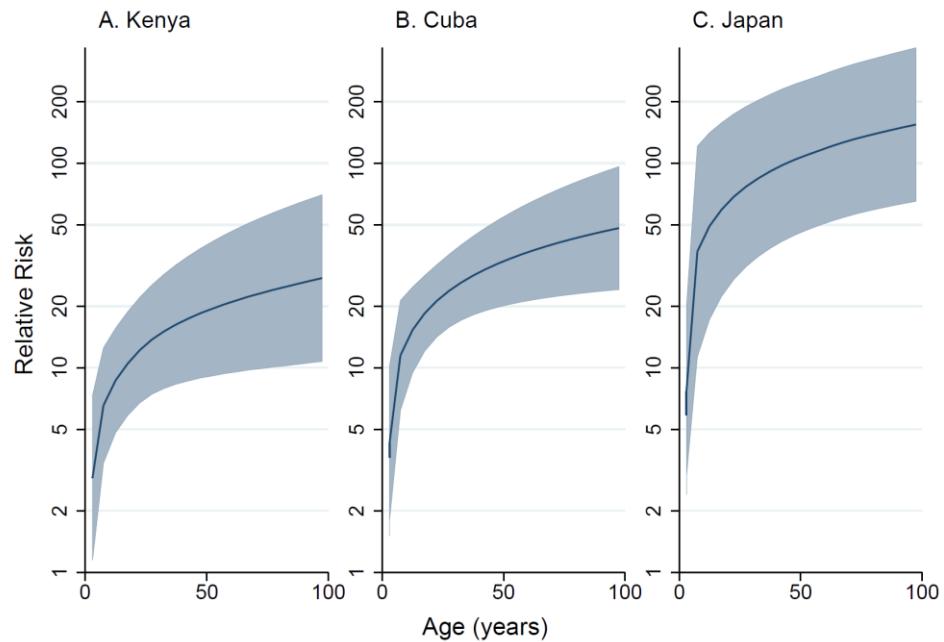


Figure S8: The relative risk (RR) of iNTS disease comparing those with HIV to those without, by age, for three countries selected to represent those with high (A), moderate (B), and low (C) underlying risk for diarrheal disease. Lines show point estimates, and shaded areas show 95% uncertainty intervals. Note that the y-axis is on a log-scale.

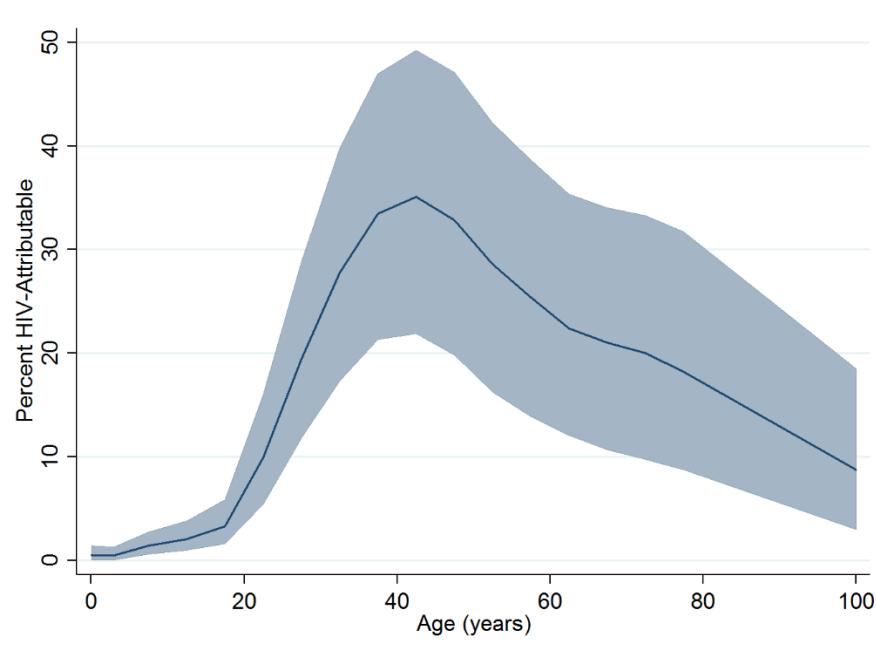


Figure S9: The percent of iNTS cases that were attributable to HIV, globally, by age. Lines show point estimates, and shaded areas show 95% uncertainty intervals.

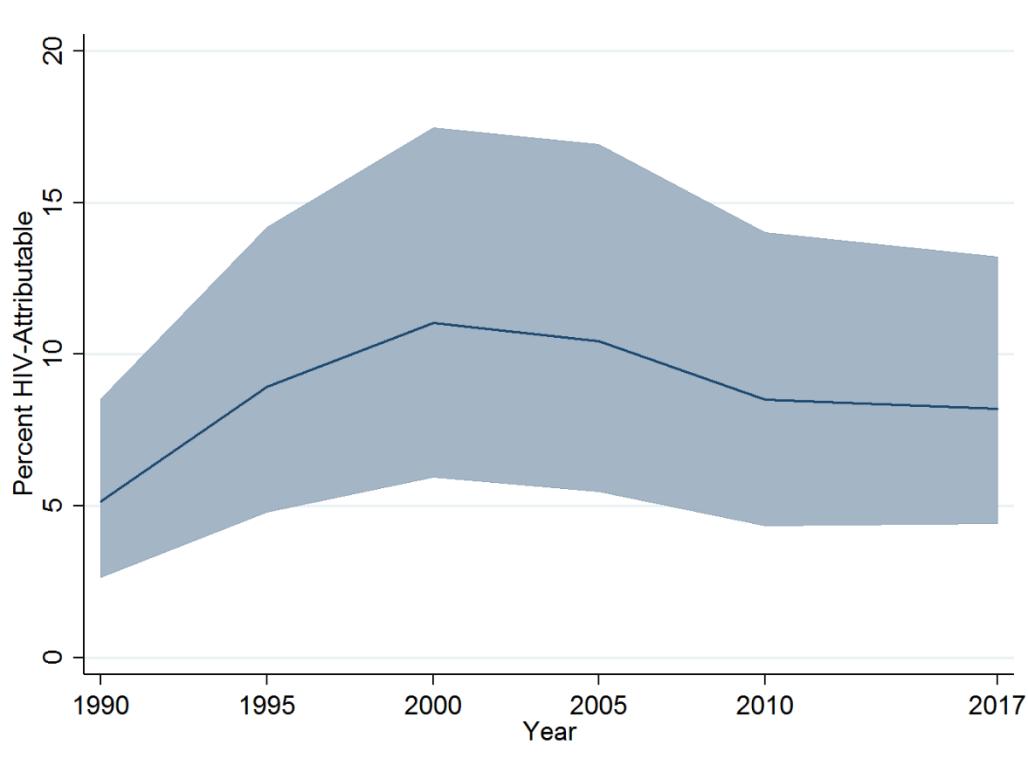


Figure S10: The percent of iNTS cases that were attributable to HIV, globally, by year. Lines show point estimates, and shaded areas show 95% uncertainty intervals.

Table S5: Estimated numbers of iNTS cases, by country, with 95% uncertainty intervals, in 1990, 2005, and 2017.

Country	1990	2005	2017
Afghanistan	458 (355 – 578)	2,120 (1,620 – 2,754)	2,837 (2,247 – 3,613)
Albania	43 (31 – 57)	29 (20 – 39)	24 (17 – 31)
Algeria	448 (324 – 600)	731 (545 – 955)	609 (443 – 794)
American Samoa	2 (1 – 3)	2 (1 – 4)	1 (1 – 2)
Andorra	0 (0 – <1)	0 (0 – 1)	0 (0 – 1)
Angola	2,373 (1,883 – 3,172)	8,718 (6,979 – 11,987)	5,533 (4,389 – 7,322)
Antigua and Barbuda	1 (1 – 2)	2 (1 – 2)	2 (1 – 2)
Argentina	364 (260 – 487)	326 (222 – 443)	341 (226 – 466)
Armenia	48 (35 – 62)	34 (24 – 46)	31 (22 – 41)
Australia	98 (62 – 142)	121 (78 – 168)	150 (97 – 211)
Austria	42 (28 – 59)	45 (31 – 63)	50 (32 – 69)
Azerbaijan	118 (84 – 154)	125 (88 – 162)	125 (91 – 164)
Bahrain	7 (4 – 9)	13 (9 – 17)	18 (13 – 25)
Bangladesh	5,219 (3,132 – 7,971)	6,373 (4,133 – 9,455)	6,696 (4,715 – 9,484)
Barbados	4 (3 – 5)	4 (3 – 5)	4 (3 – 5)
Belarus	137 (103 – 178)	102 (73 – 137)	96 (69 – 125)
Belgium	54 (37 – 75)	57 (38 – 81)	67 (46 – 91)
Belize	8 (6 – 11)	13 (10 – 17)	19 (14 – 24)
Benin	2,522 (1,731 – 4,086)	8,041 (5,815 – 11,593)	7,507 (5,346 – 11,241)
Bermuda	1 (1 – 1)	1 (1 – 1)	1 (1 – 1)
Bhutan	12 (8 – 18)	9 (5 – 15)	12 (7 – 18)
Bolivia	162 (122 – 213)	207 (154 – 271)	199 (148 – 258)
Bosnia and Herzegovina	41 (28 – 54)	28 (19 – 38)	23 (16 – 31)

Country	1990	2005	2017
Botswana	214 (171 – 278)	192 (156 – 238)	196 (157 – 244)
Brazil	3,152 (2,383 – 4,074)	3,792 (2,816 – 4,925)	3,778 (2,846 – 4,887)
Brunei	2 (1 – 3)	3 (2 – 4)	3 (2 – 4)
Bulgaria	65 (47 – 89)	52 (36 – 71)	47 (32 – 64)
Burkina Faso	11,380 (9,069 – 14,785)	36,901 (30,848 – 44,090)	25,472 (20,578 – 30,930)
Burundi	1,673 (920 – 3,947)	1,920 (1,036 – 4,331)	1,430 (724 – 3,706)
Cambodia	281 (212 – 368)	340 (249 – 449)	293 (216 – 387)
Cameroon	6,095 (4,200 – 9,649)	28,753 (22,307 – 37,678)	15,130 (10,643 – 22,727)
Canada	73 (43 – 119)	98 (59 – 149)	97 (55 – 149)
Cape Verde	121 (84 – 202)	79 (55 – 122)	48 (33 – 71)
Central African Republic	927 (736 – 1,241)	3,510 (2,822 – 4,451)	1,493 (1,203 – 1,995)
Chad	3,995 (2,826 – 6,270)	7,003 (4,940 – 10,689)	7,735 (5,395 – 12,377)
Chile	85 (54 – 124)	113 (71 – 159)	123 (83 – 171)
China	8,978 (5,987 – 12,569)	9,813 (6,724 – 13,280)	8,405 (5,640 – 11,661)
Colombia	647 (482 – 851)	860 (633 – 1,116)	825 (601 – 1,066)
Comoros	43 (21 – 123)	52 (27 – 140)	40 (16 – 108)
Congo	602 (483 – 799)	1,384 (1,111 – 1,836)	885 (717 – 1,160)
Costa Rica	54 (39 – 72)	66 (47 – 86)	61 (44 – 80)
Cote d'Ivoire	10,558 (7,613 – 14,970)	29,180 (22,052 – 37,443)	17,775 (12,747 – 24,883)
Croatia	34 (24 – 47)	29 (20 – 39)	29 (20 – 39)
Cuba	209 (156 – 271)	222 (167 – 286)	184 (137 – 239)
Cyprus	5 (3 – 6)	5 (4 – 8)	7 (4 – 9)
Czech Republic	70 (47 – 96)	65 (44 – 89)	70 (47 – 95)
Democratic Republic of the Congo	31,584 (25,057 – 41,604)	63,325 (50,501 – 79,051)	32,423 (25,931 – 42,179)

Country	1990	2005	2017
Denmark	96 (77 – 116)	98 (79 – 117)	93 (72 – 114)
Djibouti	59 (31 – 142)	71 (34 – 191)	74 (36 – 165)
Dominica	2 (1 – 3)	2 (1 – 2)	2 (1 – 2)
Dominican Republic	265 (205 – 336)	413 (322 – 523)	436 (343 – 546)
Ecuador	193 (140 – 260)	250 (185 – 324)	255 (187 – 332)
Egypt	1,098 (815 – 1,445)	1,376 (1,011 – 1,803)	1,507 (1,090 – 2,023)
El Salvador	170 (130 – 217)	161 (121 – 209)	134 (101 – 174)
Equatorial Guinea	237 (188 – 320)	480 (380 – 644)	362 (288 – 472)
Eritrea	391 (203 – 949)	512 (239 – 1,597)	483 (227 – 1,309)
Estonia	18 (13 – 23)	14 (10 – 18)	14 (10 – 18)
Ethiopia	328 (180 – 518)	486 (265 – 742)	536 (287 – 840)
Federated States of Micronesia	6 (4 – 10)	5 (3 – 9)	3 (2 – 5)
Fiji	25 (17 – 39)	23 (15 – 37)	20 (14 – 29)
Finland	13 (7 – 21)	14 (9 – 22)	14 (8 – 22)
France	323 (212 – 461)	342 (226 – 473)	370 (241 – 512)
Gabon	265 (212 – 355)	169 (136 – 213)	114 (91 – 148)
Georgia	81 (59 – 105)	60 (44 – 78)	48 (36 – 62)
Germany	434 (294 – 607)	447 (297 – 621)	462 (310 – 637)
Ghana	4,958 (3,882 – 7,023)	12,000 (10,228 – 14,023)	9,148 (7,277 – 11,647)
Greece	58 (39 – 81)	59 (39 – 83)	59 (39 – 81)
Greenland	0 (0 – <1)	0 (0 – <1)	0 (0 – <1)
Grenada	3 (2 – 3)	3 (2 – 3)	2 (2 – 3)
Guam	2 (2 – 4)	3 (2 – 6)	3 (2 – 5)
Guatemala	251 (192 – 325)	372 (278 – 492)	402 (301 – 516)

Country	1990	2005	2017
Guinea	3,621 (2,517 – 5,741)	13,528 (10,268 – 17,671)	10,618 (7,566 – 15,016)
Guinea-Bissau	444 (339 – 636)	472 (360 – 681)	410 (312 – 552)
Guyana	25 (19 – 32)	29 (23 – 36)	27 (21 – 34)
Haiti	372 (289 – 468)	636 (489 – 813)	815 (647 – 1,002)
Honduras	158 (118 – 207)	228 (174 – 293)	260 (199 – 336)
Hungary	76 (53 – 102)	66 (46 – 90)	63 (42 – 84)
Iceland	2 (1 – 2)	2 (1 – 2)	2 (1 – 3)
India	18,101 (13,613 – 23,605)	23,435 (17,756 – 30,437)	30,919 (23,491 – 39,334)
Indonesia	3,237 (2,389 – 4,265)	4,266 (3,165 – 5,601)	4,212 (3,101 – 5,492)
Iran	1,123 (829 – 1,499)	1,208 (862 – 1,598)	1,227 (893 – 1,602)
Iraq	440 (326 – 581)	839 (628 – 1,105)	1,411 (1,093 – 1,800)
Ireland	22 (15 – 31)	23 (15 – 32)	27 (18 – 38)
Israel	155 (126 – 191)	130 (113 – 149)	265 (212 – 322)
Italy	324 (220 – 454)	325 (219 – 449)	358 (235 – 494)
Jamaica	59 (45 – 76)	66 (49 – 85)	62 (46 – 80)
Japan	1,079 (748 – 1,444)	1,023 (728 – 1,363)	895 (618 – 1,209)
Jordan	73 (51 – 98)	106 (77 – 138)	151 (104 – 200)
Kazakhstan	244 (176 – 320)	186 (132 – 243)	232 (174 – 302)
Kenya	24,697 (19,644 – 31,463)	30,597 (24,832 – 38,050)	27,323 (21,767 – 35,036)
Kiribati	6 (4 – 10)	8 (6 – 14)	7 (5 – 10)
Kuwait	19 (13 – 26)	31 (22 – 40)	47 (32 – 65)
Kyrgyzstan	95 (69 – 126)	92 (67 – 119)	100 (72 – 134)
Laos	102 (77 – 133)	146 (106 – 192)	134 (99 – 173)
Latvia	33 (24 – 42)	24 (17 – 31)	21 (16 – 28)

Country	1990	2005	2017
Lebanon	69 (50 – 92)	164 (123 – 212)	163 (120 – 212)
Lesotho	366 (294 – 473)	331 (270 – 419)	271 (218 – 348)
Liberia	867 (612 – 1,383)	4,437 (3,414 – 5,756)	2,621 (1,866 – 3,980)
Libya	57 (39 – 80)	86 (61 – 116)	89 (62 – 117)
Lithuania	45 (33 – 59)	36 (26 – 47)	30 (22 – 38)
Luxembourg	2 (1 – 3)	3 (2 – 4)	3 (2 – 4)
Macedonia	14 (10 – 20)	14 (9 – 19)	14 (10 – 19)
Madagascar	44 (24 – 69)	69 (36 – 110)	90 (51 – 143)
Malawi	16,959 (13,557 – 20,995)	12,705 (11,535 – 14,005)	5,307 (4,439 – 6,307)
Malaysia	195 (131 – 276)	310 (214 – 415)	293 (199 – 396)
Maldives	7 (6 – 10)	10 (7 – 13)	10 (7 – 13)
Mali	8,512 (6,138 – 11,956)	23,092 (18,024 – 29,624)	24,636 (18,367 – 33,242)
Malta	2 (1 – 3)	2 (1 – 3)	2 (2 – 3)
Marshall Islands	3 (2 – 5)	3 (2 – 5)	2 (1 – 3)
Mauritania	693 (482 – 1,102)	1,110 (777 – 1,711)	809 (548 – 1,366)
Mauritius	11 (8 – 15)	15 (10 – 19)	12 (8 – 16)
Mexico	2,027 (1,517 – 2,630)	2,181 (1,643 – 2,819)	2,211 (1,645 – 2,881)
Moldova	94 (70 – 122)	92 (71 – 116)	63 (47 – 80)
Mongolia	40 (29 – 53)	43 (31 – 57)	67 (51 – 87)
Montenegro	5 (4 – 7)	5 (3 – 6)	4 (3 – 6)
Morocco	862 (667 – 1,097)	1,008 (763 – 1,314)	737 (550 – 963)
Mozambique	11,385 (9,034 – 14,724)	16,600 (14,159 – 19,289)	7,328 (6,086 – 8,896)
Myanmar	1,128 (853 – 1,453)	1,407 (1,037 – 1,885)	1,111 (835 – 1,431)
Namibia	375 (297 – 485)	370 (299 – 469)	259 (209 – 332)

Country	1990	2005	2017
Nepal	935 (565 – 1,483)	1,091 (690 – 1,659)	978 (666 – 1,360)
Netherlands	82 (55 – 114)	91 (64 – 125)	96 (63 – 134)
New Zealand	27 (18 – 37)	34 (23 – 46)	38 (26 – 52)
Nicaragua	128 (96 – 170)	187 (144 – 241)	188 (146 – 239)
Niger	5,873 (4,062 – 8,847)	16,967 (12,341 – 22,710)	18,817 (13,287 – 28,030)
Nigeria	73,073 (53,872 – 101,157)	212,428 (160,678 – 278,877)	161,933 (115,120 – 230,157)
North Korea	590 (245 – 1,107)	716 (399 – 1,177)	636 (350 – 1,010)
Northern Mariana Islands	1 (1 – 1)	1 (1 – 2)	1 (0 – 1)
Norway	34 (25 – 45)	37 (27 – 48)	42 (30 – 54)
Oman	97 (75 – 126)	91 (69 – 118)	70 (50 – 94)
Pakistan	6,305 (4,357 – 9,123)	7,279 (5,155 – 9,954)	10,258 (6,580 – 15,050)
Palestine	52 (39 – 68)	103 (77 – 131)	184 (143 – 234)
Panama	41 (30 – 54)	59 (43 – 77)	67 (49 – 88)
Papua New Guinea	358 (261 – 564)	728 (496 – 1,339)	729 (519 – 1,078)
Paraguay	114 (85 – 151)	132 (97 – 173)	127 (94 – 168)
Peru	353 (252 – 471)	460 (331 – 615)	509 (373 – 669)
Philippines	1,536 (1,150 – 2,002)	2,293 (1,701 – 3,000)	2,022 (1,495 – 2,646)
Poland	293 (203 – 400)	182 (127 – 240)	248 (171 – 339)
Portugal	60 (41 – 82)	59 (41 – 81)	61 (42 – 85)
Puerto Rico	48 (34 – 63)	52 (39 – 68)	48 (35 – 63)
Qatar	5 (3 – 6)	11 (7 – 15)	30 (20 – 43)
Romania	260 (186 – 340)	165 (115 – 217)	135 (92 – 184)
Russian Federation	2,275 (1,679 – 2,966)	1,955 (1,443 – 2,552)	1,967 (1,469 – 2,541)
Rwanda	1,138 (597 – 2,886)	1,091 (552 – 2,994)	835 (400 – 2,100)

Country	1990	2005	2017
Saint Lucia	4 (3 – 5)	4 (3 – 5)	3 (3 – 4)
Saint Vincent and the Grenadines	3 (3 – 4)	3 (2 – 4)	3 (2 – 3)
Samoa	7 (5 – 13)	9 (6 – 15)	7 (5 – 11)
Sao Tome and Principe	37 (26 – 64)	43 (30 – 66)	34 (24 – 53)
Saudi Arabia	488 (373 – 629)	657 (497 – 859)	527 (377 – 705)
Senegal	3,048 (2,302 – 4,476)	3,127 (2,360 – 4,600)	1,823 (1,418 – 2,459)
Serbia	87 (61 – 114)	79 (56 – 105)	65 (47 – 87)
Seychelles	1 (1 – 1)	1 (1 – 1)	1 (1 – 1)
Sierra Leone	2,774 (1,972 – 4,063)	10,836 (8,405 – 13,402)	6,332 (4,547 – 8,949)
Singapore	23 (15 – 33)	31 (20 – 44)	32 (20 – 46)
Slovakia	38 (26 – 52)	35 (24 – 49)	35 (24 – 48)
Slovenia	14 (9 – 19)	13 (9 – 17)	14 (9 – 19)
Solomon Islands	25 (17 – 42)	43 (29 – 81)	37 (26 – 55)
Somalia	1,140 (575 – 2,953)	2,005 (996 – 4,722)	1,680 (819 – 4,373)
South Africa	5,956 (3,838 – 9,897)	4,553 (3,244 – 7,401)	3,315 (2,450 – 5,261)
South Korea	347 (221 – 486)	319 (204 – 448)	296 (188 – 427)
South Sudan	1,147 (604 – 2,689)	2,251 (1,225 – 4,735)	1,367 (683 – 3,761)
Spain	215 (141 – 309)	238 (160 – 331)	260 (171 – 365)
Sri Lanka	357 (259 – 464)	341 (252 – 451)	269 (190 – 354)
Sudan	744 (576 – 958)	2,548 (2,000 – 3,180)	2,221 (1,732 – 2,826)
Suriname	11 (8 – 15)	15 (12 – 20)	15 (11 – 19)
Swaziland	162 (128 – 213)	155 (124 – 201)	127 (101 – 161)
Sweden	70 (50 – 92)	69 (50 – 90)	82 (60 – 107)
Switzerland	39 (27 – 53)	41 (27 – 57)	49 (33 – 66)

Country	1990	2005	2017
Syria	300 (220 – 393)	473 (352 – 622)	303 (218 – 405)
Taiwan	1,036 (791 – 1,330)	709 (550 – 878)	749 (577 – 935)
Tajikistan	108 (80 – 142)	116 (84 – 156)	147 (105 – 194)
Tanzania	4,967 (3,877 – 6,854)	6,677 (5,344 – 8,456)	3,217 (2,503 – 4,263)
Thailand	1,406 (1,059 – 1,790)	1,554 (1,181 – 2,008)	1,267 (952 – 1,656)
The Bahamas	4 (3 – 6)	6 (4 – 8)	7 (5 – 8)
The Gambia	821 (635 – 1,107)	990 (805 – 1,238)	717 (561 – 979)
Timor-Leste	13 (10 – 18)	20 (14 – 27)	20 (14 – 27)
Togo	2,884 (2,085 – 4,250)	7,822 (5,800 – 10,193)	7,856 (5,855 – 10,278)
Tonga	5 (4 – 8)	6 (4 – 10)	4 (3 – 6)
Trinidad and Tobago	26 (19 – 34)	25 (19 – 33)	25 (18 – 32)
Tunisia	175 (130 – 235)	206 (155 – 265)	202 (149 – 261)
Turkey	1,233 (915 – 1,640)	1,787 (1,341 – 2,297)	1,377 (1,022 – 1,784)
Turkmenistan	96 (72 – 124)	74 (54 – 98)	74 (55 – 96)
Uganda	6,495 (3,534 – 13,943)	8,616 (4,650 – 17,397)	3,307 (1,518 – 9,023)
Ukraine	767 (559 – 984)	674 (494 – 867)	628 (464 – 799)
United Arab Emirates	30 (21 – 40)	56 (38 – 76)	107 (67 – 159)
United Kingdom	449 (328 – 587)	457 (332 – 604)	509 (374 – 668)
United States	4,552 (3,444 – 5,747)	5,133 (3,915 – 6,443)	5,981 (4,539 – 7,512)
Uruguay	19 (12 – 27)	23 (16 – 32)	23 (14 – 33)
Uzbekistan	303 (215 – 407)	303 (208 – 403)	355 (245 – 473)
Vanuatu	12 (9 – 19)	21 (14 – 39)	19 (13 – 29)
Venezuela	319 (231 – 423)	418 (304 – 558)	442 (322 – 581)
Vietnam	940 (650 – 1,257)	1,146 (813 – 1,528)	1,039 (743 – 1,366)

Country	1990	2005	2017
Virgin Islands, U.S.	1 (1 – 2)	2 (1 – 2)	1 (1 – 2)
Yemen	715 (554 – 903)	1,771 (1,388 – 2,227)	2,003 (1,561 – 2,500)
Zambia	1,252 (636 – 2,803)	1,721 (884 – 4,388)	1,667 (787 – 4,399)
Zimbabwe	1,822 (1,456 – 2,405)	2,054 (1,641 – 2,735)	2,445 (1,954 – 3,192)

Table S6: The numbers of iNTS cases, deaths, and DALYs, with 95% uncertainty intervals, by country, in 2017.

Country	Cases	Deaths	DALYs
Afghanistan	2,837 (2,247 – 3,613)	579 (321 – 944)	41,408 (23,115 – 68,167)
Albania	24 (17 – 31)	3 (1 – 5)	105 (54 – 179)
Algeria	609 (443 – 794)	39 (20 – 69)	2,271 (1,118 – 4,198)
American Samoa	1 (1 – 2)	0 (0 – <1)	4 (2 – 8)
Andorra	0 (0 – 1)	0 (0 – <1)	1 (0 – 2)
Angola	5,533 (4,389 – 7,322)	548 (303 – 894)	39,238 (21,523 – 66,201)
Antigua and Barbuda	2 (1 – 2)	0 (0 – <1)	6 (3 – 10)
Argentina	341 (226 – 466)	20 (10 – 36)	1,065 (526 – 1,897)
Armenia	31 (22 – 41)	2 (1 – 4)	111 (58 – 194)
Australia	150 (97 – 211)	8 (4 – 15)	330 (151 – 629)
Austria	50 (32 – 69)	4 (2 – 8)	100 (47 – 188)
Azerbaijan	125 (91 – 164)	9 (5 – 15)	469 (240 – 843)
Bahrain	18 (13 – 25)	1 (0 – 2)	52 (26 – 93)
Bangladesh	6,696 (4,715 – 9,484)	752 (403 – 1,305)	51,116 (26,691 – 92,812)
Barbados	4 (3 – 5)	0 (0 – <1)	11 (6 – 20)
Belarus	96 (69 – 125)	7 (4 – 12)	258 (135 – 451)
Belgium	67 (46 – 91)	5 (2 – 9)	131 (59 – 248)
Belize	19 (14 – 24)	1 (1 – 2)	77 (42 – 132)
Benin	7,507 (5,346 – 11,241)	1,023 (531 – 1,856)	76,560 (39,280 – 143,762)
Bermuda	1 (1 – 1)	0 (0 – <1)	3 (1 – 5)
Bhutan	12 (7 – 18)	1 (0 – 2)	64 (30 – 127)
Bolivia	199 (148 – 258)	17 (9 – 29)	1,026 (508 – 1,801)
Bosnia and Herzegovina	23 (16 – 31)	2 (1 – 4)	84 (42 – 142)

Country	Cases	Deaths	DALYs
Botswana	196 (157 – 244)	6 (3 – 11)	422 (218 – 777)
Brazil	3,778 (2,846 – 4,887)	249 (135 – 416)	14,485 (7,718 – 24,859)
Brunei	3 (2 – 4)	0 (0 – <1)	7 (3 – 15)
Bulgaria	47 (32 – 64)	5 (2 – 8)	140 (72 – 240)
Burkina Faso	25,472 (20,578 – 30,930)	4,217 (2,336 – 6,795)	319,627 (176,339 – 521,278)
Burundi	1,430 (724 – 3,706)	171 (71 – 473)	13,123 (5,176 – 38,886)
Cambodia	293 (216 – 387)	23 (12 – 39)	1,396 (769 – 2,407)
Cameroon	15,130 (10,643 – 22,727)	1,333 (676 – 2,467)	99,196 (48,046 – 183,937)
Canada	97 (55 – 149)	5 (2 – 10)	183 (77 – 353)
Cape Verde	48 (33 – 71)	5 (3 – 9)	345 (181 – 659)
Central African Republic	1,493 (1,203 – 1,995)	178 (97 – 310)	12,642 (6,760 – 23,112)
Chad	7,735 (5,395 – 12,377)	1,240 (648 – 2,243)	95,445 (49,375 – 178,712)
Chile	123 (83 – 171)	7 (3 – 13)	341 (166 – 640)
China	8,405 (5,640 – 11,661)	586 (294 – 1,001)	26,852 (13,699 – 47,233)
Colombia	825 (601 – 1,066)	59 (31 – 100)	3,389 (1,743 – 5,964)
Comoros	40 (16 – 108)	5 (2 – 14)	372 (116 – 1,100)
Congo	885 (717 – 1,160)	65 (35 – 112)	4,312 (2,224 – 7,544)
Costa Rica	61 (44 – 80)	4 (2 – 6)	207 (109 – 362)
Cote d'Ivoire	17,775 (12,747 – 24,883)	2,139 (1,183 – 3,723)	160,812 (86,817 – 288,183)
Croatia	29 (20 – 39)	2 (1 – 4)	70 (34 – 124)
Cuba	184 (137 – 239)	14 (7 – 23)	651 (345 – 1,123)
Cyprus	7 (4 – 9)	1 (0 – 1)	17 (8 – 31)
Czech Republic	70 (47 – 95)	5 (2 – 10)	167 (83 – 295)
Democratic Republic of the Congo	32,423 (25,931 – 42,179)	3,897 (2,126 – 6,491)	270,866 (144,590 – 467,116)

Country	Cases	Deaths	DALYs
Denmark	93 (72 – 114)	9 (4 – 17)	201 (97 – 349)
Djibouti	74 (36 – 165)	7 (3 – 18)	511 (196 – 1,390)
Dominica	2 (1 – 2)	0 (0 – <1)	7 (4 – 12)
Dominican Republic	436 (343 – 546)	40 (22 – 68)	2,532 (1,401 – 4,358)
Ecuador	255 (187 – 332)	19 (10 – 33)	1,151 (595 – 2,022)
Egypt	1,507 (1,090 – 2,023)	126 (67 – 212)	8,215 (4,370 – 14,347)
El Salvador	134 (101 – 174)	11 (6 – 18)	619 (321 – 1,077)
Equatorial Guinea	362 (288 – 472)	17 (8 – 33)	1,255 (597 – 2,433)
Eritrea	483 (227 – 1,309)	89 (35 – 260)	6,638 (2,467 – 20,918)
Estonia	14 (10 – 18)	1 (0 – 2)	31 (16 – 57)
Ethiopia	536 (287 – 840)	74 (35 – 136)	5,066 (2,192 – 9,472)
Federated States of Micronesia	3 (2 – 5)	0 (0 – <1)	20 (9 – 36)
Fiji	20 (14 – 29)	2 (1 – 3)	116 (59 – 215)
Finland	14 (8 – 22)	1 (0 – 2)	29 (12 – 57)
France	370 (241 – 512)	31 (12 – 61)	793 (373 – 1,526)
Gabon	114 (91 – 148)	7 (4 – 12)	436 (225 – 794)
Georgia	48 (36 – 62)	4 (2 – 7)	183 (96 – 312)
Germany	462 (310 – 637)	41 (16 – 80)	995 (434 – 1,836)
Ghana	9,148 (7,277 – 11,647)	866 (494 – 1,429)	62,687 (34,438 – 107,455)
Greece	59 (39 – 81)	7 (3 – 13)	155 (75 – 277)
Greenland	0 (0 – <1)	0 (0 – <1)	1 (0 – 1)
Grenada	2 (2 – 3)	0 (0 – <1)	9 (4 – 15)
Guam	3 (2 – 5)	0 (0 – <1)	9 (4 – 18)
Guatemala	402 (301 – 516)	36 (20 – 60)	2,478 (1,326 – 4,106)

Country	Cases	Deaths	DALYs
Guinea	10,618 (7,566 – 15,016)	1,564 (824 – 2,693)	116,097 (59,306 – 205,805)
Guinea-Bissau	410 (312 – 552)	57 (31 – 101)	4,353 (2,274 – 7,834)
Guyana	27 (21 – 34)	2 (1 – 3)	120 (66 – 209)
Haiti	815 (647 – 1,002)	77 (44 – 123)	5,268 (3,028 – 8,555)
Honduras	260 (199 – 336)	29 (15 – 49)	1,780 (906 – 3,163)
Hungary	63 (42 – 84)	5 (2 – 9)	154 (78 – 271)
Iceland	2 (1 – 3)	0 (0 – <1)	4 (2 – 7)
India	30,919 (23,491 – 39,334)	2,349 (1,297 – 3,821)	138,869 (76,561 – 226,330)
Indonesia	4,212 (3,101 – 5,492)	290 (154 – 489)	16,666 (9,123 – 28,401)
Iran	1,227 (893 – 1,602)	85 (44 – 150)	4,875 (2,499 – 8,750)
Iraq	1,411 (1,093 – 1,800)	96 (53 – 162)	6,593 (3,614 – 11,323)
Ireland	27 (18 – 38)	2 (1 – 4)	58 (26 – 111)
Israel	265 (212 – 322)	23 (11 – 41)	707 (376 – 1,239)
Italy	358 (235 – 494)	35 (13 – 68)	786 (352 – 1,461)
Jamaica	62 (46 – 80)	4 (2 – 7)	247 (129 – 439)
Japan	895 (618 – 1,209)	66 (29 – 123)	2,031 (1,006 – 3,651)
Jordan	151 (104 – 200)	10 (5 – 18)	661 (337 – 1,215)
Kazakhstan	232 (174 – 302)	15 (8 – 25)	837 (431 – 1,498)
Kenya	27,323 (21,767 – 35,036)	2,466 (1,446 – 3,900)	176,829 (103,381 – 285,558)
Kiribati	7 (5 – 10)	1 (0 – 2)	66 (36 – 124)
Kuwait	47 (32 – 65)	2 (1 – 4)	121 (58 – 229)
Kyrgyzstan	100 (72 – 134)	8 (4 – 14)	510 (271 – 880)
Laos	134 (99 – 173)	12 (7 – 20)	830 (453 – 1,404)
Latvia	21 (16 – 28)	2 (1 – 3)	54 (27 – 95)

Country	Cases	Deaths	DALYs
Lebanon	163 (120 – 212)	10 (5 – 19)	596 (280 – 1,148)
Lesotho	271 (218 – 348)	11 (6 – 19)	764 (399 – 1,303)
Liberia	2,621 (1,866 – 3,980)	326 (162 – 595)	23,772 (11,216 – 45,067)
Libya	89 (62 – 117)	7 (3 – 13)	427 (203 – 825)
Lithuania	30 (22 – 38)	2 (1 – 4)	69 (35 – 121)
Luxembourg	3 (2 – 4)	0 (0 – <1)	7 (3 – 13)
Macedonia	14 (10 – 19)	1 (1 – 2)	52 (26 – 90)
Madagascar	90 (51 – 143)	11 (5 – 21)	713 (314 – 1,382)
Malawi	5,307 (4,439 – 6,307)	609 (338 – 1,024)	44,876 (24,960 – 75,955)
Malaysia	293 (199 – 396)	13 (6 – 23)	716 (333 – 1,372)
Maldives	10 (7 – 13)	1 (0 – 1)	35 (18 – 61)
Mali	24,636 (18,367 – 33,242)	5,128 (2,763 – 8,491)	395,208 (205,981 – 673,495)
Malta	2 (2 – 3)	0 (0 – <1)	7 (3 – 12)
Marshall Islands	2 (1 – 3)	0 (0 – <1)	13 (6 – 23)
Mauritania	809 (548 – 1,366)	102 (54 – 183)	7,165 (3,631 – 13,361)
Mauritius	12 (8 – 16)	1 (0 – 1)	39 (20 – 69)
Mexico	2,211 (1,645 – 2,881)	144 (79 – 242)	8,549 (4,625 – 14,461)
Moldova	63 (47 – 80)	5 (3 – 8)	224 (122 – 374)
Mongolia	67 (51 – 87)	5 (3 – 8)	297 (157 – 529)
Montenegro	4 (3 – 6)	0 (0 – 1)	13 (7 – 23)
Morocco	737 (550 – 963)	74 (39 – 123)	4,397 (2,274 – 7,520)
Mozambique	7,328 (6,086 – 8,896)	973 (542 – 1,584)	76,075 (42,202 – 126,279)
Myanmar	1,111 (835 – 1,431)	106 (58 – 178)	6,212 (3,429 – 10,497)
Namibia	259 (209 – 332)	12 (6 – 21)	807 (416 – 1,515)

Country	Cases	Deaths	DALYs
Nepal	978 (666 – 1,360)	89 (46 – 156)	5,588 (2,892 – 9,987)
Netherlands	96 (63 – 134)	7 (3 – 14)	194 (86 – 358)
New Zealand	38 (26 – 52)	2 (1 – 4)	93 (44 – 175)
Nicaragua	188 (146 – 239)	17 (9 – 27)	1,058 (586 – 1,762)
Niger	18,817 (13,287 – 28,030)	3,055 (1,547 – 5,409)	229,779 (112,077 – 425,454)
Nigeria	161,933 (115,120 – 230,157)	15,345 (8,122 – 27,297)	1,157,878 (601,676 – 2,128,304)
North Korea	636 (350 – 1,010)	73 (33 – 135)	3,815 (1,705 – 7,510)
Northern Mariana Islands	1 (0 – 1)	0 (0 – <1)	2 (1 – 4)
Norway	42 (30 – 54)	3 (1 – 5)	77 (38 – 143)
Oman	70 (50 – 94)	3 (2 – 6)	221 (105 – 405)
Pakistan	10,258 (6,580 – 15,050)	1,312 (652 – 2,409)	90,819 (44,410 – 171,126)
Palestine	184 (143 – 234)	17 (10 – 29)	1,119 (609 – 1,898)
Panama	67 (49 – 88)	4 (2 – 7)	264 (138 – 464)
Papua New Guinea	729 (519 – 1,078)	80 (44 – 142)	6,044 (3,270 – 10,993)
Paraguay	127 (94 – 168)	7 (4 – 13)	440 (225 – 787)
Peru	509 (373 – 669)	36 (19 – 63)	2,112 (1,105 – 3,716)
Philippines	2,022 (1,495 – 2,646)	157 (87 – 268)	10,110 (5,607 – 17,248)
Poland	248 (171 – 339)	19 (9 – 34)	602 (299 – 1,101)
Portugal	61 (42 – 85)	5 (2 – 10)	126 (59 – 231)
Puerto Rico	48 (35 – 63)	3 (2 – 6)	133 (65 – 245)
Qatar	30 (20 – 43)	2 (1 – 4)	124 (51 – 251)
Romania	135 (92 – 184)	13 (6 – 23)	395 (207 – 694)
Russian Federation	1,967 (1,469 – 2,541)	121 (62 – 205)	4,855 (2,573 – 8,416)
Rwanda	835 (400 – 2,100)	107 (41 – 303)	8,233 (3,104 – 24,772)

Country	Cases	Deaths	DALYs
Saint Lucia	3 (3 – 4)	0 (0 – <1)	13 (7 – 22)
Saint Vincent and the Grenadines	3 (2 – 3)	0 (0 – <1)	14 (7 – 24)
Samoa	7 (5 – 11)	0 (0 – 1)	34 (17 – 67)
Sao Tome and Principe	34 (24 – 53)	5 (3 – 10)	367 (184 – 701)
Saudi Arabia	527 (377 – 705)	21 (10 – 39)	1,229 (586 – 2,323)
Senegal	1,823 (1,418 – 2,459)	288 (163 – 484)	20,510 (11,265 – 35,459)
Serbia	65 (47 – 87)	6 (3 – 11)	194 (101 – 334)
Seychelles	1 (1 – 1)	0 (0 – <1)	4 (2 – 6)
Sierra Leone	6,332 (4,547 – 8,949)	780 (419 – 1,362)	56,889 (30,289 – 102,366)
Singapore	32 (20 – 46)	1 (1 – 3)	65 (27 – 123)
Slovakia	35 (24 – 48)	3 (1 – 5)	89 (45 – 157)
Slovenia	14 (9 – 19)	1 (0 – 2)	31 (15 – 55)
Solomon Islands	37 (26 – 55)	4 (2 – 6)	275 (147 – 484)
Somalia	1,680 (819 – 4,373)	395 (147 – 1,086)	30,642 (10,850 – 88,796)
South Africa	3,315 (2,450 – 5,261)	139 (72 – 299)	9,878 (4,902 – 22,291)
South Korea	296 (188 – 427)	16 (7 – 30)	629 (288 – 1,180)
South Sudan	1,367 (683 – 3,761)	227 (88 – 680)	17,478 (6,432 – 55,846)
Spain	260 (171 – 365)	21 (8 – 43)	526 (233 – 1,008)
Sri Lanka	269 (190 – 354)	17 (9 – 29)	837 (442 – 1,460)
Sudan	2,221 (1,732 – 2,826)	215 (120 – 357)	14,968 (8,295 – 25,156)
Suriname	15 (11 – 19)	1 (1 – 2)	54 (29 – 89)
Swaziland	127 (101 – 161)	5 (3 – 9)	367 (193 – 635)
Sweden	82 (60 – 107)	7 (3 – 12)	200 (97 – 359)
Switzerland	49 (33 – 66)	3 (1 – 7)	94 (42 – 186)

Country	Cases	Deaths	DALYs
Syria	303 (218 – 405)	26 (13 – 46)	1,605 (817 – 2,873)
Taiwan	749 (577 – 935)	44 (22 – 75)	1,751 (897 – 3,056)
Tajikistan	147 (105 – 194)	16 (9 – 27)	1,047 (542 – 1,782)
Tanzania	3,217 (2,503 – 4,263)	458 (248 – 778)	34,922 (19,050 – 60,687)
Thailand	1,267 (952 – 1,656)	87 (46 – 147)	4,265 (2,179 – 7,421)
The Bahamas	7 (5 – 8)	0 (0 – 1)	17 (9 – 32)
The Gambia	717 (561 – 979)	100 (54 – 174)	7,314 (3,891 – 13,107)
Timor-Leste	20 (14 – 27)	2 (1 – 3)	135 (66 – 234)
Togo	7,856 (5,855 – 10,278)	735 (403 – 1,242)	52,294 (28,117 – 89,593)
Tonga	4 (3 – 6)	0 (0 – <1)	17 (9 – 31)
Trinidad and Tobago	25 (18 – 32)	2 (1 – 3)	85 (43 – 148)
Tunisia	202 (149 – 261)	12 (7 – 21)	640 (335 – 1,164)
Turkey	1,377 (1,022 – 1,784)	82 (43 – 141)	4,398 (2,284 – 7,849)
Turkmenistan	74 (55 – 96)	6 (3 – 9)	327 (171 – 566)
Uganda	3,307 (1,518 – 9,023)	339 (127 – 1,040)	27,076 (9,751 – 86,684)
Ukraine	628 (464 – 799)	86 (45 – 148)	4,064 (2,092 – 7,120)
United Arab Emirates	107 (67 – 159)	6 (3 – 11)	349 (169 – 657)
United Kingdom	509 (374 – 668)	37 (17 – 68)	1,154 (575 – 2,036)
United States	5,981 (4,539 – 7,512)	334 (155 – 608)	10,979 (5,447 – 19,874)
Uruguay	23 (14 – 33)	1 (1 – 3)	67 (31 – 125)
Uzbekistan	355 (245 – 473)	27 (14 – 47)	1,574 (844 – 2,773)
Vanuatu	19 (13 – 29)	3 (1 – 5)	188 (97 – 328)
Venezuela	442 (322 – 581)	29 (15 – 49)	1,743 (925 – 3,074)
Vietnam	1,039 (743 – 1,366)	75 (39 – 126)	4,008 (2,131 – 6,913)

Country	Cases	Deaths	DALYs
Virgin Islands, U.S.	1 (1 – 2)	0 (0 – <1)	5 (3 – 9)
Yemen	2,003 (1,561 – 2,500)	214 (118 – 364)	14,728 (8,135 – 25,091)
Zambia	1,667 (787 – 4,399)	163 (62 – 524)	13,108 (4,767 – 43,886)
Zimbabwe	2,445 (1,954 – 3,192)	151 (83 – 252)	11,171 (6,162 – 18,951)

Table S7: iNTS incidence rates and mortality rates, by country, with 95% uncertainty intervals, in 1990 and 2017.

Country	Incidence (per 100,000)		Mortality (per million)	
	1990	2017	1990	2017
Afghanistan	3.9 (3.0, 4.8)	6.9 (5.5, 8.4)	8.2 (2.8, 14.5)	16.8 (9.3, 26.8)
Albania	1.3 (0.9, 1.6)	0.93 (0.65, 1.23)	1.4 (0.8, 2.2)	0.88 (0.45, 1.48)
Algeria	1.5 (1.1, 2.0)	1.5 (1.1, 2.0)	1.6 (0.9, 2.6)	1.0 (0.5, 1.8)
American Samoa	2.6 (1.8, 3.9)	2.1 (1.5, 3.0)	1.8 (1.0, 3.1)	1.1 (0.6, 2.1)
Andorra	0.59 (0.37, 0.87)	0.60 (0.38, 0.85)	0.36 (0.16, 0.66)	0.29 (0.13, 0.57)
Angola	19.7 (16.2, 24.6)	17.0 (14.0, 21.1)	36.5 (18.7, 59.3)	19.1 (10.7, 29.8)
Antigua and Barbuda	1.9 (1.4, 2.5)	2.1 (1.6, 2.7)	1.5 (0.8, 2.5)	1.4 (0.7, 2.3)
Argentina	1.1 (0.8, 1.4)	0.82 (0.55, 1.12)	0.92 (0.50, 1.52)	0.46 (0.23, 0.80)
Armenia	1.4 (1.0, 1.8)	1.1 (0.8, 1.5)	1.3 (0.7, 2.1)	0.81 (0.42, 1.40)
Australia	0.62 (0.39, 0.89)	0.72 (0.46, 1.03)	0.35 (0.17, 0.61)	0.30 (0.14, 0.56)
Austria	0.59 (0.37, 0.87)	0.61 (0.38, 0.86)	0.44 (0.21, 0.79)	0.30 (0.13, 0.57)
Azerbaijan	1.5 (1.1, 2.0)	1.3 (1.0, 1.7)	1.4 (0.7, 2.2)	1.00 (0.51, 1.69)
Bahrain	1.2 (0.8, 1.6)	1.4 (1.0, 1.9)	1.00 (0.52, 1.74)	0.76 (0.39, 1.31)
Bangladesh	3.7 (2.4, 5.5)	4.2 (3.0, 5.9)	6.0 (3.1, 10.7)	4.9 (2.6, 8.4)
Barbados	1.5 (1.1, 2.0)	1.7 (1.3, 2.2)	1.0 (0.6, 1.8)	0.85 (0.43, 1.50)
Belarus	1.4 (1.1, 1.8)	1.2 (0.9, 1.6)	1.2 (0.6, 1.9)	0.65 (0.33, 1.16)
Belgium	0.58 (0.36, 0.82)	0.63 (0.41, 0.88)	0.41 (0.19, 0.72)	0.29 (0.13, 0.55)
Belize	3.6 (2.8, 4.5)	4.6 (3.5, 5.8)	3.7 (2.1, 5.9)	3.3 (1.8, 5.4)
Benin	39.3 (28.9, 57.3)	52.9 (39.7, 74.1)	84.0 (44.3, 142.4)	79.2 (42.6, 135.4)

Country	Incidence (per 100,000)		Mortality (per million)	
	1990	2017	1990	2017
Bermuda	1.5 (1.1, 2.0)	1.9 (1.4, 2.4)	0.96 (0.50, 1.65)	0.91 (0.46, 1.63)
Bhutan	1.7 (1.1, 2.5)	1.3 (0.8, 1.9)	2.3 (1.1, 4.0)	1.1 (0.5, 2.0)
Bolivia	2.1 (1.5, 2.7)	1.6 (1.2, 2.1)	2.6 (1.4, 4.2)	1.5 (0.7, 2.5)
Bosnia and Herzegovina	0.97 (0.66, 1.28)	0.77 (0.54, 1.05)	1.1 (0.6, 1.8)	0.60 (0.30, 1.03)
Botswana	16.1 (13.2, 20.2)	8.5 (6.9, 10.5)	11.6 (6.0, 19.2)	2.7 (1.4, 4.8)
Brazil	1.9 (1.4, 2.4)	2.0 (1.5, 2.6)	2.1 (1.2, 3.4)	1.3 (0.7, 2.2)
Brunei	0.78 (0.52, 1.10)	0.71 (0.46, 1.00)	0.46 (0.23, 0.81)	0.34 (0.15, 0.63)
Bulgaria	0.80 (0.57, 1.10)	0.75 (0.52, 1.04)	0.72 (0.38, 1.24)	0.47 (0.23, 0.83)
Burkina Faso	93.8 (77.5, 114.5)	94.7 (79.6, 112.4)	172.6 (92.2, 281.6)	168.0 (92.9, 263.6)
Burundi	23.2 (13.8, 45.9)	10.2 (5.5, 23.1)	34.6 (16.1, 72.3)	13.2 (6.0, 30.4)
Cambodia	2.1 (1.6, 2.7)	1.7 (1.3, 2.3)	3.0 (1.6, 4.8)	1.5 (0.8, 2.6)
Cameroon	46.3 (33.8, 66.9)	46.3 (34.1, 66.5)	77.5 (40.7, 132.8)	45.0 (22.8, 78.6)
Canada	0.28 (0.17, 0.45)	0.29 (0.17, 0.46)	0.15 (0.07, 0.28)	0.12 (0.05, 0.22)
Cape Verde	28.9 (21.2, 43.5)	9.0 (6.3, 13.6)	43.5 (23.1, 75.5)	10.1 (5.5, 18.2)
Central African Republic	29.5 (24.4, 37.0)	30.9 (25.5, 39.9)	40.4 (20.1, 68.5)	39.7 (22.2, 66.4)
Chad	50.0 (36.9, 71.2)	37.6 (27.7, 55.0)	88.2 (44.8, 148.3)	64.8 (34.4, 108.9)
Chile	0.63 (0.39, 0.91)	0.77 (0.51, 1.08)	0.55 (0.27, 0.95)	0.40 (0.19, 0.74)
China	0.74 (0.51, 1.03)	0.73 (0.50, 1.02)	0.92 (0.49, 1.57)	0.44 (0.22, 0.75)
Colombia	1.8 (1.3, 2.3)	1.7 (1.2, 2.2)	1.8 (1.0, 3.0)	1.2 (0.6, 2.0)
Comoros	7.2 (3.5, 17.1)	5.1 (2.1, 13.1)	14.4 (6.3, 33.7)	7.5 (2.7, 18.4)

Country	Incidence (per 100,000)		Mortality (per million)	
	1990	2017	1990	2017
Congo	22.2 (18.3, 27.9)	17.0 (14.0, 21.3)	25.0 (13.8, 41.3)	14.7 (8.0, 24.3)
Costa Rica	1.6 (1.1, 2.0)	1.4 (1.0, 1.9)	1.5 (0.8, 2.5)	0.86 (0.45, 1.48)
Cote d'Ivoire	67.4 (50.2, 89.5)	59.7 (44.6, 80.4)	90.0 (49.5, 145.7)	77.0 (43.3, 129.2)
Croatia	0.77 (0.53, 1.07)	0.75 (0.51, 1.04)	0.60 (0.31, 1.05)	0.40 (0.19, 0.72)
Cuba	2.0 (1.5, 2.6)	2.0 (1.5, 2.6)	1.6 (0.9, 2.7)	1.3 (0.7, 2.2)
Cyprus	0.62 (0.41, 0.88)	0.59 (0.38, 0.86)	0.60 (0.29, 1.02)	0.34 (0.15, 0.64)
Czech Republic	0.75 (0.50, 1.04)	0.74 (0.49, 1.02)	0.62 (0.32, 1.05)	0.37 (0.18, 0.67)
Democratic Republic of the Congo	71.1 (58.5, 87.7)	35.9 (29.8, 44.2)	93.3 (50.9, 152.7)	49.4 (27.8, 78.4)
Denmark	1.8 (1.4, 2.2)	1.5 (1.2, 2.0)	1.4 (0.7, 2.4)	0.96 (0.44, 1.72)
Djibouti	9.1 (5.0, 19.1)	5.8 (2.9, 12.1)	13.2 (5.6, 29.3)	6.3 (2.6, 14.5)
Dominica	2.5 (1.9, 3.2)	2.5 (1.8, 3.2)	2.2 (1.2, 3.6)	2.0 (1.0, 3.4)
Dominican Republic	3.2 (2.5, 4.0)	4.2 (3.3, 5.3)	4.0 (2.3, 6.4)	4.0 (2.2, 6.7)
Ecuador	1.7 (1.2, 2.2)	1.5 (1.1, 2.0)	1.6 (0.9, 2.7)	1.2 (0.6, 2.0)
Egypt	1.7 (1.3, 2.2)	1.4 (1.1, 1.9)	2.2 (1.2, 3.5)	1.3 (0.7, 2.2)
El Salvador	2.8 (2.1, 3.5)	2.2 (1.7, 2.9)	3.5 (2.0, 5.7)	1.8 (1.0, 3.0)
Equatorial Guinea	46.7 (38.6, 58.4)	25.7 (21.1, 31.9)	82.0 (43.1, 134.2)	14.2 (7.2, 25.3)
Eritrea	10.1 (5.7, 20.8)	6.9 (3.4, 17.1)	22.9 (9.4, 49.5)	14.2 (6.1, 34.9)
Estonia	1.2 (0.9, 1.6)	1.2 (0.9, 1.6)	0.86 (0.46, 1.49)	0.56 (0.27, 1.01)
Ethiopia	0.53 (0.32, 0.80)	0.46 (0.27, 0.70)	0.88 (0.39, 1.62)	0.76 (0.37, 1.31)
Federated States of Micronesia	4.4 (3.1, 6.8)	3.0 (2.2, 4.1)	4.9 (2.6, 8.6)	2.7 (1.3, 4.6)

Country	Incidence (per 100,000)		Mortality (per million)	
	1990	2017	1990	2017
Fiji	2.7 (1.9, 4.1)	2.2 (1.6, 3.2)	2.4 (1.3, 4.4)	1.8 (0.9, 3.2)
Finland	0.27 (0.16, 0.43)	0.28 (0.17, 0.46)	0.15 (0.07, 0.28)	0.12 (0.05, 0.23)
France	0.59 (0.37, 0.87)	0.56 (0.35, 0.82)	0.43 (0.21, 0.78)	0.30 (0.13, 0.57)
Gabon	24.6 (20.2, 30.8)	6.6 (5.3, 8.4)	27.5 (15.2, 44.3)	4.2 (2.3, 7.1)
Georgia	1.6 (1.1, 2.0)	1.5 (1.1, 1.9)	1.2 (0.6, 1.9)	1.1 (0.6, 1.8)
Germany	0.60 (0.39, 0.85)	0.58 (0.38, 0.82)	0.45 (0.21, 0.80)	0.31 (0.13, 0.57)
Ghana	27.6 (22.5, 36.2)	27.3 (22.2, 33.9)	32.0 (18.1, 51.5)	28.0 (16.2, 44.5)
Greece	0.61 (0.41, 0.86)	0.58 (0.35, 0.84)	0.53 (0.26, 0.92)	0.38 (0.18, 0.68)
Greenland	0.53 (0.31, 0.80)	0.46 (0.27, 0.74)	0.44 (0.21, 0.79)	0.29 (0.13, 0.56)
Grenada	2.8 (2.1, 3.5)	2.2 (1.7, 2.8)	3.2 (1.8, 5.1)	1.5 (0.8, 2.5)
Guam	1.6 (1.1, 2.4)	1.9 (1.3, 2.9)	0.96 (0.51, 1.76)	0.87 (0.42, 1.66)
Guatemala	2.5 (1.9, 3.2)	2.2 (1.7, 2.8)	4.0 (2.3, 6.3)	2.1 (1.1, 3.4)
Guinea	45.6 (33.6, 65.1)	72.6 (54.0, 98.5)	107.9 (54.5, 184.5)	116.5 (61.8, 194.2)
Guinea-Bissau	34.6 (28.0, 45.7)	18.1 (14.5, 23.1)	73.7 (38.9, 122.8)	26.7 (14.4, 45.8)
Guyana	2.8 (2.1, 3.6)	3.6 (2.8, 4.6)	2.9 (1.6, 4.7)	2.6 (1.5, 4.4)
Haiti	4.8 (3.8, 5.9)	6.3 (5.0, 7.7)	6.4 (3.7, 10.3)	6.6 (3.8, 10.4)
Honduras	2.7 (2.0, 3.4)	2.5 (1.9, 3.2)	4.7 (2.7, 7.5)	3.1 (1.7, 5.3)
Hungary	0.80 (0.55, 1.09)	0.72 (0.48, 1.00)	0.68 (0.35, 1.14)	0.39 (0.19, 0.68)
Iceland	0.63 (0.42, 0.87)	0.60 (0.37, 0.85)	0.42 (0.20, 0.75)	0.30 (0.13, 0.56)
India	1.8 (1.4, 2.4)	2.2 (1.7, 2.8)	2.4 (1.3, 3.9)	1.8 (1.0, 2.9)

Country	Incidence (per 100,000)		Mortality (per million)	
	1990	2017	1990	2017
Indonesia	1.5 (1.1, 2.0)	1.7 (1.3, 2.2)	1.5 (0.8, 2.4)	1.2 (0.7, 2.1)
Iran	1.6 (1.2, 2.1)	1.6 (1.2, 2.1)	1.7 (0.9, 2.9)	1.1 (0.6, 2.0)
Iraq	2.1 (1.5, 2.6)	2.9 (2.3, 3.7)	2.5 (1.3, 4.2)	2.1 (1.2, 3.5)
Ireland	0.65 (0.44, 0.90)	0.60 (0.37, 0.85)	0.51 (0.24, 0.88)	0.31 (0.14, 0.60)
Israel	3.1 (2.5, 3.8)	2.8 (2.2, 3.4)	3.3 (1.7, 5.4)	2.1 (1.0, 3.7)
Italy	0.64 (0.43, 0.92)	0.62 (0.42, 0.89)	0.48 (0.23, 0.87)	0.34 (0.14, 0.62)
Jamaica	2.2 (1.7, 2.9)	2.4 (1.8, 3.1)	1.9 (1.1, 3.2)	1.7 (0.9, 2.9)
Japan	1.0 (0.7, 1.4)	0.88 (0.59, 1.20)	0.52 (0.26, 0.94)	0.38 (0.18, 0.69)
Jordan	1.6 (1.2, 2.1)	1.3 (0.9, 1.8)	1.9 (1.0, 3.1)	1.0 (0.6, 1.8)
Kazakhstan	1.4 (1.0, 1.8)	1.3 (1.0, 1.7)	1.2 (0.7, 2.1)	0.87 (0.45, 1.51)
Kenya	93.4 (77.5, 112.6)	53.7 (43.9, 66.7)	126.0 (71.4, 197.0)	52.2 (30.4, 81.5)
Kiribati	6.1 (4.4, 9.4)	4.9 (3.5, 7.0)	9.0 (5.0, 15.5)	7.2 (3.9, 11.9)
Kuwait	1.0 (0.7, 1.4)	1.2 (0.9, 1.6)	0.71 (0.36, 1.20)	0.56 (0.28, 1.03)
Kyrgyzstan	1.9 (1.4, 2.5)	1.5 (1.1, 2.0)	2.0 (1.1, 3.2)	1.4 (0.8, 2.3)
Laos	2.0 (1.5, 2.6)	1.8 (1.4, 2.3)	2.8 (1.5, 4.5)	1.9 (1.0, 3.0)
Latvia	1.3 (1.0, 1.7)	1.3 (0.9, 1.7)	0.92 (0.49, 1.54)	0.65 (0.32, 1.15)
Lebanon	1.4 (1.0, 1.9)	1.9 (1.4, 2.4)	1.4 (0.7, 2.4)	1.2 (0.6, 2.2)
Lesotho	19.9 (16.3, 24.6)	14.0 (11.4, 17.8)	21.6 (11.8, 34.6)	6.0 (3.1, 10.4)
Liberia	35.1 (25.9, 51.3)	46.8 (34.6, 67.5)	74.7 (38.8, 131.1)	66.4 (34.4, 115.9)
Libya	1.2 (0.8, 1.6)	1.3 (0.9, 1.7)	1.1 (0.6, 1.9)	1.1 (0.6, 2.0)

Country	Incidence (per 100,000)		Mortality (per million)	
	1990	2017	1990	2017
Lithuania	1.3 (1.0, 1.7)	1.2 (0.9, 1.6)	0.91 (0.48, 1.54)	0.57 (0.28, 1.00)
Luxembourg	0.60 (0.38, 0.85)	0.60 (0.41, 0.86)	0.37 (0.17, 0.68)	0.32 (0.14, 0.63)
Macedonia	0.74 (0.50, 1.02)	0.73 (0.50, 1.01)	0.73 (0.38, 1.26)	0.56 (0.28, 0.98)
Madagascar	0.33 (0.19, 0.49)	0.31 (0.19, 0.48)	0.64 (0.30, 1.16)	0.49 (0.22, 0.87)
Malawi	155.4 (129.0, 186.1)	30.7 (26.2, 35.6)	193.8 (79.6, 327.9)	33.1 (17.7, 56.0)
Malaysia	0.97 (0.66, 1.33)	1.0 (0.7, 1.4)	0.78 (0.40, 1.31)	0.46 (0.22, 0.84)
Maldives	2.7 (2.0, 3.4)	2.3 (1.7, 3.0)	3.4 (1.9, 5.4)	1.5 (0.8, 2.5)
Mali	75.3 (56.2, 101.0)	94.9 (73.0, 123.4)	167.1 (88.2, 281.1)	202.4 (113.7, 322.5)
Malta	0.59 (0.37, 0.87)	0.63 (0.41, 0.88)	0.53 (0.25, 0.93)	0.39 (0.18, 0.71)
Marshall Islands	4.1 (2.9, 6.5)	3.3 (2.4, 4.7)	4.8 (2.7, 8.1)	3.2 (1.7, 5.4)
Mauritania	26.4 (19.3, 38.6)	17.6 (12.5, 27.6)	44.8 (24.4, 74.3)	25.5 (14.0, 43.4)
Mauritius	0.98 (0.69, 1.33)	1.2 (0.8, 1.5)	0.94 (0.52, 1.60)	0.69 (0.36, 1.20)
Mexico	2.0 (1.5, 2.6)	1.8 (1.3, 2.3)	2.0 (1.1, 3.3)	1.2 (0.7, 2.0)
Moldova	2.1 (1.6, 2.8)	2.0 (1.5, 2.6)	2.2 (1.2, 3.5)	1.4 (0.8, 2.4)
Mongolia	1.6 (1.2, 2.1)	2.1 (1.6, 2.6)	1.8 (1.0, 2.9)	1.7 (0.9, 2.9)
Montenegro	0.85 (0.59, 1.16)	0.77 (0.53, 1.06)	0.76 (0.39, 1.26)	0.50 (0.25, 0.90)
Morocco	3.0 (2.3, 3.8)	2.1 (1.6, 2.8)	4.0 (2.2, 6.4)	2.2 (1.2, 3.7)
Mozambique	71.4 (59.0, 88.4)	24.3 (20.4, 29.2)	164.0 (88.5, 263.9)	28.2 (15.2, 45.9)
Myanmar	2.5 (1.9, 3.1)	2.2 (1.7, 2.8)	3.8 (2.0, 6.1)	2.2 (1.2, 3.6)
Namibia	25.7 (21.1, 32.0)	11.0 (9.0, 13.7)	25.1 (13.8, 40.4)	4.9 (2.5, 8.5)

Country	Incidence (per 100,000)		Mortality (per million)	
	1990	2017	1990	2017
Nepal	3.9 (2.4, 5.9)	3.1 (2.1, 4.2)	5.3 (2.5, 9.5)	3.1 (1.6, 5.2)
Netherlands	0.61 (0.42, 0.86)	0.60 (0.38, 0.86)	0.41 (0.19, 0.73)	0.29 (0.13, 0.55)
New Zealand	0.83 (0.56, 1.15)	0.99 (0.66, 1.35)	0.52 (0.26, 0.91)	0.43 (0.21, 0.80)
Nicaragua	2.6 (2.0, 3.3)	2.8 (2.2, 3.6)	4.0 (2.2, 6.4)	2.6 (1.5, 4.3)
Niger	54.7 (40.0, 74.7)	64.3 (47.7, 89.7)	119.4 (60.9, 205.1)	123.6 (64.3, 208.1)
Nigeria	67.7 (50.8, 89.7)	63.8 (47.7, 85.8)	85.2 (47.1, 136.9)	65.0 (34.7, 109.2)
North Korea	2.9 (1.3, 5.4)	3.1 (1.7, 5.0)	3.5 (1.3, 7.4)	3.2 (1.5, 6.0)
Northern Mariana Islands	1.9 (1.3, 2.8)	2.1 (1.4, 2.9)	0.87 (0.43, 1.58)	1.0 (0.5, 1.9)
Norway	0.89 (0.64, 1.19)	0.88 (0.63, 1.19)	0.56 (0.28, 0.99)	0.36 (0.17, 0.68)
Oman	4.3 (3.4, 5.4)	1.7 (1.2, 2.2)	4.9 (2.7, 8.0)	0.97 (0.49, 1.71)
Pakistan	4.7 (3.3, 6.5)	4.2 (2.8, 6.0)	6.7 (3.5, 11.4)	5.8 (3.0, 10.3)
Palestine	2.0 (1.5, 2.6)	3.4 (2.6, 4.2)	3.6 (1.9, 6.1)	3.7 (2.1, 6.2)
Panama	1.6 (1.2, 2.0)	1.7 (1.3, 2.3)	1.4 (0.7, 2.3)	1.1 (0.6, 2.0)
Papua New Guinea	6.6 (4.9, 10.1)	6.3 (4.6, 9.1)	9.9 (5.4, 16.9)	7.8 (4.4, 13.3)
Paraguay	2.4 (1.8, 3.1)	1.8 (1.3, 2.3)	2.6 (1.4, 4.3)	1.1 (0.6, 1.9)
Peru	1.4 (1.0, 1.8)	1.5 (1.1, 2.0)	1.6 (0.9, 2.7)	1.1 (0.6, 1.9)
Philippines	2.1 (1.5, 2.6)	1.8 (1.4, 2.4)	2.1 (1.2, 3.5)	1.6 (0.9, 2.7)
Poland	0.79 (0.55, 1.08)	0.72 (0.49, 1.01)	0.71 (0.37, 1.18)	0.38 (0.19, 0.71)
Portugal	0.65 (0.44, 0.88)	0.63 (0.40, 0.90)	0.68 (0.34, 1.16)	0.32 (0.15, 0.59)
Puerto Rico	1.4 (1.0, 1.8)	1.6 (1.2, 2.1)	0.86 (0.45, 1.52)	0.80 (0.40, 1.46)

Country	Incidence (per 100,000)		Mortality (per million)	
	1990	2017	1990	2017
Qatar	1.1 (0.7, 1.4)	1.3 (0.9, 1.7)	1.1 (0.6, 2.0)	0.98 (0.47, 1.80)
Romania	1.2 (0.9, 1.5)	0.77 (0.52, 1.05)	1.1 (0.6, 1.8)	0.49 (0.25, 0.86)
Russian Federation	1.6 (1.2, 2.1)	1.6 (1.2, 2.1)	1.2 (0.7, 2.1)	0.76 (0.39, 1.34)
Rwanda	11.7 (6.6, 25.1)	5.5 (2.6, 12.1)	18.5 (8.4, 39.8)	7.1 (2.9, 17.6)
Saint Lucia	2.5 (1.9, 3.2)	2.2 (1.7, 2.8)	2.4 (1.3, 4.0)	1.6 (0.9, 2.6)
Saint Vincent and the Grenadines	2.8 (2.1, 3.5)	2.6 (2.0, 3.3)	2.8 (1.6, 4.5)	2.3 (1.2, 3.7)
Samoa	3.6 (2.5, 5.9)	2.8 (2.0, 4.3)	3.2 (1.7, 5.9)	2.2 (1.1, 3.8)
Sao Tome and Principe	25.2 (18.2, 38.9)	15.5 (11.2, 23.5)	52.9 (27.9, 92.0)	24.9 (13.6, 44.3)
Saudi Arabia	2.5 (1.9, 3.1)	1.7 (1.2, 2.2)	2.7 (1.5, 4.4)	0.79 (0.39, 1.41)
Senegal	31.4 (25.0, 42.7)	10.6 (8.5, 13.7)	65.7 (36.6, 105.1)	18.7 (10.8, 29.9)
Serbia	0.99 (0.71, 1.31)	0.80 (0.56, 1.09)	1.1 (0.6, 1.8)	0.53 (0.27, 0.92)
Seychelles	1.0 (0.7, 1.4)	1.1 (0.8, 1.5)	0.91 (0.46, 1.51)	0.73 (0.38, 1.22)
Sierra Leone	59.2 (43.5, 81.8)	68.9 (51.9, 93.4)	127.0 (65.6, 217.6)	94.6 (51.2, 154.4)
Singapore	0.79 (0.52, 1.10)	0.67 (0.42, 0.96)	0.51 (0.25, 0.88)	0.26 (0.12, 0.49)
Slovakia	0.76 (0.52, 1.04)	0.74 (0.51, 1.01)	0.65 (0.34, 1.09)	0.40 (0.19, 0.72)
Slovenia	0.76 (0.52, 1.05)	0.72 (0.51, 0.99)	0.57 (0.30, 0.98)	0.36 (0.17, 0.66)
Solomon Islands	5.1 (3.6, 8.2)	4.5 (3.2, 6.5)	6.6 (3.5, 11.0)	5.0 (2.8, 8.4)
Somalia	11.5 (6.3, 25.8)	7.4 (3.8, 16.6)	21.1 (6.6, 52.4)	18.6 (7.3, 45.6)
South Africa	14.9 (9.9, 23.7)	6.1 (4.5, 9.8)	12.0 (6.5, 21.4)	2.7 (1.4, 5.8)
South Korea	0.82 (0.54, 1.13)	0.67 (0.42, 0.96)	0.59 (0.29, 1.01)	0.29 (0.13, 0.55)

Country	Incidence (per 100,000)		Mortality (per million)	
	1990	2017	1990	2017
South Sudan	14.9 (8.3, 31.1)	10.4 (5.5, 24.6)	23.1 (8.1, 56.7)	18.6 (8.4, 48.3)
Spain	0.60 (0.38, 0.87)	0.60 (0.39, 0.86)	0.48 (0.23, 0.84)	0.30 (0.13, 0.59)
Sri Lanka	2.0 (1.4, 2.5)	1.4 (1.0, 1.8)	1.7 (0.9, 2.7)	0.80 (0.43, 1.37)
Sudan	3.0 (2.4, 3.9)	4.7 (3.7, 5.8)	4.6 (2.3, 7.7)	5.2 (3.0, 8.5)
Suriname	2.6 (2.0, 3.4)	2.7 (2.1, 3.4)	2.3 (1.3, 3.8)	1.7 (0.9, 2.8)
Swaziland	18.9 (15.5, 23.5)	11.2 (9.1, 14.0)	24.7 (13.9, 39.6)	4.2 (2.2, 7.4)
Sweden	0.90 (0.63, 1.20)	0.89 (0.62, 1.20)	0.61 (0.31, 1.07)	0.46 (0.22, 0.84)
Switzerland	0.62 (0.41, 0.85)	0.62 (0.42, 0.85)	0.35 (0.16, 0.63)	0.29 (0.12, 0.56)
Syria	1.9 (1.4, 2.5)	1.6 (1.2, 2.1)	2.5 (1.3, 4.0)	1.5 (0.8, 2.5)
Taiwan	5.3 (4.1, 6.7)	4.4 (3.3, 5.5)	3.9 (2.2, 6.3)	1.9 (1.0, 3.4)
Tajikistan	1.7 (1.2, 2.2)	1.5 (1.1, 1.9)	2.1 (1.1, 3.4)	1.9 (1.0, 3.0)
Tanzania	17.0 (13.8, 21.9)	5.3 (4.3, 6.7)	21.6 (10.7, 36.4)	7.1 (4.0, 11.7)
Thailand	2.4 (1.8, 3.0)	2.3 (1.7, 2.9)	2.3 (1.3, 3.8)	1.4 (0.7, 2.4)
The Bahamas	1.6 (1.2, 2.0)	1.9 (1.4, 2.5)	1.1 (0.5, 1.8)	0.91 (0.46, 1.62)
The Gambia	65.9 (53.9, 82.7)	29.3 (23.5, 38.2)	130.3 (72.7, 213.3)	45.4 (24.8, 74.9)
Timor-Leste	1.4 (1.0, 1.8)	1.3 (1.0, 1.8)	1.9 (1.0, 3.3)	1.6 (0.8, 2.6)
Togo	61.3 (45.8, 83.1)	90.3 (68.6, 117.1)	113.8 (62.6, 191.2)	96.6 (54.2, 161.0)
Tonga	4.3 (3.1, 6.6)	3.4 (2.4, 4.9)	3.0 (1.6, 5.2)	2.3 (1.2, 4.0)
Trinidad and Tobago	2.0 (1.5, 2.6)	2.1 (1.5, 2.7)	1.6 (0.9, 2.7)	1.2 (0.6, 2.1)
Tunisia	1.8 (1.4, 2.4)	1.9 (1.4, 2.4)	2.0 (1.1, 3.3)	1.1 (0.6, 2.0)

Country	Incidence (per 100,000)		Mortality (per million)	
	1990	2017	1990	2017
Turkey	1.9 (1.5, 2.6)	1.9 (1.4, 2.4)	2.2 (1.2, 3.5)	1.1 (0.6, 1.8)
Turkmenistan	2.3 (1.7, 2.9)	1.5 (1.1, 1.9)	2.3 (1.3, 3.8)	1.2 (0.7, 2.1)
Uganda	27.2 (16.2, 51.8)	6.3 (3.1, 14.6)	27.1 (12.2, 58.2)	6.4 (2.6, 16.9)
Ukraine	1.6 (1.2, 2.1)	1.7 (1.3, 2.2)	1.2 (0.7, 2.1)	2.1 (1.1, 3.6)
United Arab Emirates	1.5 (1.1, 2.0)	1.4 (1.0, 1.9)	1.4 (0.7, 2.4)	0.93 (0.46, 1.69)
United Kingdom	0.86 (0.62, 1.14)	0.85 (0.61, 1.13)	0.67 (0.35, 1.13)	0.42 (0.20, 0.74)
United States	1.9 (1.4, 2.4)	2.0 (1.5, 2.5)	1.2 (0.6, 2.0)	0.84 (0.40, 1.51)
Uruguay	0.64 (0.41, 0.91)	0.76 (0.46, 1.10)	0.56 (0.28, 0.95)	0.40 (0.19, 0.72)
Uzbekistan	1.2 (0.9, 1.6)	1.1 (0.8, 1.4)	1.4 (0.8, 2.3)	0.98 (0.52, 1.72)
Vanuatu	5.8 (4.2, 8.8)	5.3 (3.8, 7.7)	9.6 (5.0, 16.2)	8.7 (4.6, 14.5)
Venezuela	1.5 (1.1, 1.9)	1.5 (1.1, 1.9)	1.4 (0.8, 2.4)	0.99 (0.53, 1.69)
Vietnam	1.2 (0.8, 1.6)	1.2 (0.9, 1.5)	1.4 (0.7, 2.4)	0.85 (0.45, 1.43)
Virgin Islands, U.S.	1.4 (1.0, 1.8)	1.7 (1.3, 2.2)	0.87 (0.47, 1.46)	1.0 (0.5, 1.8)
Yemen	4.0 (3.2, 4.9)	5.5 (4.3, 6.8)	6.4 (2.7, 11.1)	7.0 (3.9, 11.5)
Zambia	11.8 (6.4, 22.9)	7.6 (3.8, 17.3)	15.4 (6.4, 34.9)	6.9 (2.7, 20.0)
Zimbabwe	16.9 (13.9, 21.1)	16.0 (13.0, 20.0)	11.3 (6.0, 18.2)	9.4 (5.0, 15.1)

Table S8: Estimated percentage of iNTS cases that were attributable to HIV, by country, with 95% uncertainty intervals, in 1990, 2005, and 2017.

Country	1990	2005	2017
Afghanistan	0.0 (0.0 – 0.1)	0.0 (0.0 – 0.1)	0.1 (0.0 – 0.3)
Albania	0.0 (0.0 – <0.1)	0.0 (0.0 – <0.1)	0.0 (0.0 – 0.1)
Algeria	0.0 (0.0 – 0.1)	0.2 (0.1 – 0.3)	0.6 (0.3 – 1.1)
American Samoa	0.0 (0.0 – 0.1)	0.0 (0.0 – 0.1)	0.1 (0.0 – 0.2)
Andorra	6.5 (1.7 – 14.8)	10.4 (2.8 – 23.5)	13.2 (4.3 – 28.0)
Angola	0.3 (0.1 – 0.8)	6.6 (3.0 – 12.0)	8.5 (4.1 – 14.7)
Antigua and Barbuda	1.4 (0.7 – 2.5)	1.9 (1.0 – 3.3)	1.8 (1.0 – 3.0)
Argentina	1.5 (0.7 – 2.6)	6.4 (3.2 – 10.6)	12.2 (6.5 – 19.9)
Armenia	0.0 (0.0 – <0.1)	0.1 (0.1 – 0.2)	1.4 (0.7 – 2.4)
Australia	3.0 (1.2 – 5.9)	4.3 (1.6 – 9.3)	4.8 (1.9 – 9.8)
Austria	2.1 (0.7 – 4.8)	9.1 (3.2 – 19.4)	16.0 (6.2 – 31.7)
Azerbaijan	0.0 (0.0 – 0.1)	0.1 (0.1 – 0.2)	0.6 (0.3 – 1.0)
Bahrain	0.2 (0.1 – 0.4)	0.4 (0.2 – 0.6)	0.5 (0.3 – 0.8)
Bangladesh	0.0 (0.0 – <0.1)	0.0 (0.0 – <0.1)	0.1 (0.0 – 0.1)
Barbados	2.6 (1.4 – 4.4)	6.4 (3.7 – 10.1)	9.3 (5.6 – 14.3)
Belarus	0.1 (0.1 – 0.3)	1.2 (0.6 – 2.1)	4.5 (2.3 – 7.4)
Belgium	2.9 (0.8 – 7.3)	15.4 (5.1 – 32.8)	20.9 (7.7 – 40.6)
Belize	1.3 (0.6 – 2.5)	4.9 (2.6 – 8.3)	6.7 (3.8 – 11.0)
Benin	0.2 (0.1 – 0.4)	4.5 (1.8 – 8.8)	4.2 (1.7 – 8.2)
Bermuda	3.7 (2.1 – 6.2)	3.2 (1.8 – 5.3)	2.3 (1.3 – 3.7)
Bhutan	0.2 (0.0 – 0.4)	0.7 (0.2 – 1.5)	1.5 (0.6 – 3.3)
Bolivia	0.7 (0.3 – 1.4)	1.3 (0.6 – 2.4)	3.1 (1.5 – 5.5)
Bosnia and Herzegovina	0.0 (0.0 – <0.1)	0.0 (0.0 – 0.1)	0.0 (0.0 – 0.1)

Country	1990	2005	2017
Botswana	23.3 (14.5 – 33.3)	43.8 (33.9 – 54.8)	49.2 (39.4 – 59.1)
Brazil	1.3 (0.7 – 2.1)	3.5 (1.9 – 5.7)	7.0 (4.2 – 11.1)
Brunei	0.4 (0.2 – 0.8)	2.7 (0.9 – 6.0)	5.7 (2.2 – 11.8)
Bulgaria	0.2 (0.1 – 0.3)	0.6 (0.3 – 1.2)	1.0 (0.5 – 1.8)
Burkina Faso	9.0 (4.5 – 15.2)	7.1 (3.2 – 12.6)	3.3 (1.4 – 6.2)
Burundi	4.9 (1.6 – 10.2)	10.0 (3.9 – 19.1)	4.8 (1.6 – 10.4)
Cambodia	0.1 (0.0 – 0.1)	4.4 (2.1 – 7.9)	4.2 (2.2 – 7.4)
Cameroon	2.8 (1.1 – 5.6)	12.7 (6.5 – 21.4)	10.7 (5.5 – 17.9)
Canada	7.6 (2.9 – 15.1)	16.9 (6.1 – 33.3)	19.5 (7.5 – 38.3)
Cape Verde	1.9 (0.7 – 3.9)	6.3 (2.8 – 11.2)	8.9 (4.7 – 15.0)
Central African Republic	16.1 (8.6 – 25.1)	21.8 (12.6 – 32.8)	15.4 (8.0 – 24.6)
Chad	3.6 (1.4 – 6.9)	6.7 (2.8 – 12.5)	5.0 (2.0 – 9.3)
Chile	0.9 (0.4 – 1.5)	4.5 (2.1 – 8.0)	9.9 (4.9 – 17.0)
China	0.1 (0.0 – 0.1)	0.5 (0.2 – 0.8)	1.0 (0.5 – 1.6)
Colombia	0.3 (0.1 – 0.5)	1.7 (0.9 – 2.8)	4.0 (2.3 – 6.5)
Comoros	0.0 (0.0 – <0.1)	0.0 (0.0 – 0.1)	0.1 (0.0 – 0.2)
Congo	16.0 (8.5 – 25.5)	15.9 (8.2 – 25.4)	16.3 (8.6 – 26.0)
Costa Rica	0.6 (0.3 – 1.0)	2.3 (1.3 – 3.8)	4.3 (2.3 – 7.3)
Cote d'Ivoire	11.9 (5.9 – 20.1)	14.0 (7.5 – 23.3)	11.5 (5.9 – 19.4)
Croatia	0.1 (0.0 – 0.2)	0.3 (0.2 – 0.6)	0.8 (0.4 – 1.4)
Cuba	0.1 (0.1 – 0.3)	0.9 (0.5 – 1.6)	4.5 (2.6 – 7.3)
Cyprus	0.2 (0.1 – 0.4)	2.1 (0.5 – 5.7)	5.3 (1.4 – 13.1)
Czech Republic	0.0 (0.0 – 0.1)	0.3 (0.1 – 0.5)	0.7 (0.4 – 1.3)
Democratic Republic of the Congo	7.4 (3.3 – 13.2)	8.6 (3.9 – 15.2)	4.7 (1.9 – 9.0)

Country	1990	2005	2017
Denmark	5.1 (1.4 – 12.1)	13.5 (3.9 – 30.1)	18.2 (5.7 – 37.4)
Djibouti	0.0 (0.0 – 0.1)	8.1 (2.7 – 16.7)	6.9 (2.1 – 14.1)
Dominica	0.9 (0.4 – 1.7)	1.5 (0.8 – 2.7)	1.6 (0.8 – 2.7)
Dominican Republic	0.6 (0.3 – 1.2)	6.0 (3.1 – 10.1)	7.0 (3.9 – 11.5)
Ecuador	0.2 (0.1 – 0.3)	1.5 (0.8 – 2.5)	3.7 (2.0 – 5.9)
Egypt	0.0 (0.0 – <0.1)	0.0 (0.0 – <0.1)	0.1 (0.0 – 0.1)
El Salvador	0.3 (0.1 – 0.6)	2.4 (1.2 – 4.2)	4.4 (2.4 – 7.4)
Equatorial Guinea	2.0 (0.7 – 4.1)	13.9 (7.4 – 21.8)	20.3 (12.8 – 29.8)
Eritrea	1.1 (0.3 – 2.7)	5.4 (1.8 – 11.7)	3.1 (0.9 – 7.1)
Estonia	0.0 (0.0 – <0.1)	2.1 (1.1 – 3.5)	6.0 (3.3 – 9.6)
Ethiopia	5.8 (2.3 – 12.0)	8.2 (3.6 – 15.3)	5.2 (2.2 – 10.3)
Federated States of Micronesia	0.1 (0.0 – 0.3)	0.4 (0.1 – 1.0)	2.3 (0.9 – 4.2)
Fiji	0.1 (0.0 – 0.1)	0.2 (0.1 – 0.4)	0.5 (0.2 – 0.9)
Finland	1.2 (0.3 – 3.2)	6.2 (1.5 – 16.7)	9.2 (2.2 – 22.9)
France	7.1 (2.5 – 15.2)	12.3 (4.0 – 27.1)	16.3 (5.7 – 32.7)
Gabon	5.7 (2.5 – 10.5)	21.3 (13.2 – 31.0)	19.9 (12.5 – 28.5)
Georgia	0.0 (0.0 – <0.1)	0.3 (0.1 – 0.5)	2.6 (1.4 – 4.5)
Germany	4.1 (1.3 – 9.8)	10.0 (2.9 – 23.7)	18.4 (6.2 – 38.0)
Ghana	5.7 (2.5 – 10.6)	10.0 (4.9 – 17.2)	7.9 (3.9 – 13.6)
Greece	0.8 (0.3 – 1.9)	2.7 (0.6 – 7.6)	5.2 (1.3 – 13.1)
Greenland	6.1 (2.7 – 11.3)	11.6 (5.1 – 21.8)	17.5 (7.4 – 32.1)
Grenada	0.7 (0.3 – 1.3)	1.2 (0.6 – 2.2)	1.1 (0.6 – 1.9)
Guam	0.3 (0.1 – 0.6)	0.3 (0.1 – 0.6)	0.4 (0.2 – 0.8)
Guatemala	0.2 (0.1 – 0.4)	1.5 (0.7 – 2.6)	2.2 (1.1 – 3.7)

Country	1990	2005	2017
Guinea	1.3 (0.5 – 2.7)	5.8 (2.5 – 11.0)	5.6 (2.5 – 10.2)
Guinea-Bissau	1.9 (0.7 – 3.9)	9.8 (4.5 – 17.0)	10.3 (5.1 – 17.2)
Guyana	1.9 (0.8 – 3.5)	7.5 (4.0 – 12.7)	11.0 (6.6 – 17.3)
Haiti	6.4 (3.0 – 11.4)	8.7 (4.3 – 14.8)	8.9 (4.5 – 15.3)
Honduras	0.2 (0.1 – 0.5)	0.6 (0.3 – 1.0)	1.2 (0.6 – 2.1)
Hungary	0.6 (0.3 – 1.2)	0.6 (0.3 – 1.1)	0.8 (0.4 – 1.6)
Iceland	1.9 (0.5 – 5.1)	5.4 (1.2 – 14.0)	9.5 (2.4 – 23.2)
India	0.0 (0.0 – 0.1)	1.4 (0.7 – 2.6)	1.3 (0.6 – 2.3)
Indonesia	0.0 (0.0 – <0.1)	0.3 (0.2 – 0.5)	1.0 (0.5 – 1.7)
Iran	0.0 (0.0 – <0.1)	0.2 (0.1 – 0.3)	0.7 (0.4 – 1.2)
Iraq	0.0 (0.0 – <0.1)	0.0 (0.0 – <0.1)	0.0 (0.0 – 0.1)
Ireland	0.7 (0.2 – 1.6)	6.4 (1.7 – 16.1)	10.3 (2.9 – 25.4)
Israel	1.2 (0.5 – 2.4)	6.7 (2.4 – 13.6)	12.1 (4.8 – 23.8)
Italy	5.4 (2.0 – 11.2)	13.3 (5.6 – 24.9)	19.9 (9.0 – 34.9)
Jamaica	1.4 (0.6 – 2.6)	4.0 (2.1 – 6.7)	7.2 (4.0 – 12.0)
Japan	0.2 (0.1 – 0.4)	1.1 (0.4 – 2.5)	2.0 (0.8 – 4.4)
Jordan	0.0 (0.0 – <0.1)	0.0 (0.0 – 0.1)	0.1 (0.1 – 0.2)
Kazakhstan	0.1 (0.1 – 0.3)	0.5 (0.2 – 0.8)	1.3 (0.7 – 2.3)
Kenya	8.4 (4.6 – 13.5)	22.6 (13.9 – 32.7)	19.8 (12.2 – 28.8)
Kiribati	0.0 (0.0 – 0.1)	0.0 (0.0 – 0.1)	0.0 (0.0 – 0.1)
Kuwait	0.1 (0.0 – 0.1)	0.1 (0.1 – 0.2)	0.2 (0.1 – 0.4)
Kyrgyzstan	0.1 (0.0 – 0.1)	0.4 (0.2 – 0.8)	1.3 (0.6 – 2.3)
Laos	0.0 (0.0 – <0.1)	0.8 (0.2 – 2.1)	1.3 (0.5 – 2.9)
Latvia	0.4 (0.2 – 0.8)	1.7 (1.0 – 2.9)	4.3 (2.3 – 6.9)

Country	1990	2005	2017
Lebanon	0.2 (0.1 – 0.4)	0.3 (0.1 – 0.5)	0.5 (0.2 – 0.9)
Lesotho	13.7 (6.6 – 22.7)	42.3 (29.6 – 55.2)	46.5 (34.9 – 58.0)
Liberia	2.1 (0.7 – 4.7)	8.1 (3.7 – 14.5)	5.0 (2.1 – 9.4)
Libya	0.0 (0.0 – 0.1)	0.2 (0.1 – 0.4)	0.4 (0.2 – 0.9)
Lithuania	0.2 (0.1 – 0.3)	0.9 (0.5 – 1.5)	1.7 (0.9 – 2.8)
Luxembourg	3.4 (0.9 – 8.8)	9.9 (2.6 – 23.6)	15.8 (4.7 – 34.6)
Macedonia	0.0 (0.0 – <0.1)	0.1 (0.0 – 0.1)	0.2 (0.1 – 0.4)
Madagascar	0.0 (0.0 – <0.1)	2.0 (0.7 – 4.7)	1.5 (0.5 – 3.4)
Malawi	19.8 (11.3 – 29.8)	32.7 (21.7 – 45.0)	28.7 (18.8 – 39.7)
Malaysia	0.2 (0.1 – 0.4)	2.5 (1.3 – 4.4)	3.6 (1.8 – 6.2)
Maldives	0.0 (0.0 – <0.1)	0.0 (0.0 – <0.1)	0.0 (0.0 – 0.1)
Mali	1.1 (0.4 – 2.4)	5.0 (2.1 – 9.6)	4.1 (1.7 – 7.9)
Malta	0.9 (0.3 – 1.9)	4.2 (1.1 – 11.4)	9.4 (2.5 – 22.5)
Marshall Islands	0.1 (0.0 – 0.2)	0.2 (0.1 – 0.4)	0.5 (0.2 – 1.2)
Mauritania	0.3 (0.1 – 0.8)	0.2 (0.0 – 0.4)	0.2 (0.1 – 0.6)
Mauritius	0.1 (0.0 – 0.1)	1.5 (0.7 – 2.5)	6.5 (3.5 – 10.8)
Mexico	0.5 (0.3 – 0.9)	1.9 (1.0 – 3.1)	3.8 (2.1 – 6.2)
Moldova	0.2 (0.1 – 0.4)	1.2 (0.6 – 2.3)	3.7 (1.9 – 6.5)
Mongolia	0.0 (0.0 – <0.1)	0.0 (0.0 – 0.1)	0.2 (0.1 – 0.5)
Montenegro	0.0 (0.0 – 0.1)	0.2 (0.1 – 0.3)	0.6 (0.3 – 1.0)
Morocco	0.1 (0.0 – 0.1)	0.4 (0.2 – 0.9)	0.7 (0.3 – 1.4)
Mozambique	5.7 (2.5 – 10.7)	22.7 (13.5 – 33.9)	30.7 (20.4 – 41.8)
Myanmar	0.1 (0.0 – 0.2)	3.6 (1.7 – 6.7)	4.1 (2.0 – 7.4)
Namibia	13.5 (7.0 – 21.9)	38.6 (27.4 – 50.4)	40.8 (30.6 – 51.6)

Country	1990	2005	2017
Nepal	0.0 (0.0 – <0.1)	1.1 (0.4 – 2.5)	1.2 (0.5 – 2.5)
Netherlands	5.0 (1.5 – 12.2)	11.8 (3.3 – 27.3)	17.8 (6.0 – 37.2)
New Zealand	2.0 (0.8 – 4.0)	3.9 (1.5 – 8.1)	5.5 (2.2 – 10.9)
Nicaragua	0.1 (0.0 – 0.1)	0.6 (0.3 – 1.2)	2.8 (1.5 – 4.8)
Niger	0.5 (0.2 – 1.1)	3.3 (1.3 – 6.5)	1.4 (0.5 – 2.9)
Nigeria	2.8 (1.1 – 5.7)	11.7 (5.8 – 20.0)	9.5 (4.7 – 16.8)
North Korea	0.1 (0.0 – 0.2)	0.4 (0.1 – 1.0)	0.9 (0.3 – 2.1)
Northern Mariana Islands	0.1 (0.0 – 0.1)	0.1 (0.0 – 0.2)	0.2 (0.1 – 0.3)
Norway	1.7 (0.5 – 4.2)	7.6 (2.2 – 17.7)	12.2 (3.8 – 26.5)
Oman	0.0 (0.0 – 0.1)	0.5 (0.3 – 0.9)	1.8 (1.0 – 3.0)
Pakistan	0.0 (0.0 – 0.1)	0.1 (0.0 – 0.2)	0.4 (0.1 – 0.9)
Palestine	0.0 (0.0 – <0.1)	0.0 (0.0 – <0.1)	0.0 (0.0 – 0.1)
Panama	1.2 (0.6 – 2.2)	4.1 (2.3 – 6.8)	7.5 (4.5 – 11.4)
Papua New Guinea	0.0 (0.0 – <0.1)	1.5 (0.6 – 3.1)	1.8 (0.7 – 3.5)
Paraguay	0.1 (0.1 – 0.2)	1.3 (0.7 – 2.3)	3.8 (2.1 – 6.3)
Peru	0.4 (0.2 – 0.7)	1.6 (0.9 – 2.7)	3.6 (2.0 – 5.9)
Philippines	0.3 (0.1 – 0.6)	0.7 (0.3 – 1.2)	1.4 (0.7 – 2.4)
Poland	0.1 (0.0 – 0.1)	0.7 (0.4 – 1.3)	1.4 (0.7 – 2.6)
Portugal	3.2 (1.5 – 5.7)	26.1 (14.5 – 40.6)	39.9 (24.5 – 56.5)
Puerto Rico	5.1 (2.8 – 8.0)	2.9 (1.6 – 4.9)	1.4 (0.8 – 2.4)
Qatar	0.2 (0.1 – 0.3)	0.2 (0.1 – 0.4)	0.2 (0.1 – 0.3)
Romania	0.1 (0.0 – 0.1)	0.8 (0.4 – 1.3)	2.2 (1.2 – 3.7)
Russian Federation	0.6 (0.3 – 1.0)	2.3 (1.3 – 3.6)	9.1 (5.5 – 13.8)
Rwanda	3.2 (1.0 – 7.1)	8.8 (3.2 – 18.1)	8.7 (2.6 – 17.2)

Country	1990	2005	2017
Saint Lucia	0.5 (0.3 – 1.0)	1.0 (0.5 – 1.8)	1.0 (0.5 – 1.6)
Saint Vincent and the Grenadines	1.5 (0.7 – 2.7)	3.4 (1.9 – 5.9)	3.0 (1.6 – 5.0)
Samoa	0.1 (0.0 – 0.3)	0.2 (0.1 – 0.5)	0.5 (0.2 – 1.2)
Sao Tome and Principe	0.0 (0.0 – 0.1)	0.1 (0.0 – 0.2)	0.2 (0.1 – 0.4)
Saudi Arabia	0.1 (0.0 – 0.1)	0.2 (0.1 – 0.4)	0.4 (0.2 – 0.7)
Senegal	0.6 (0.2 – 1.3)	3.9 (1.8 – 7.2)	3.3 (1.5 – 6.1)
Serbia	0.1 (0.0 – 0.2)	0.5 (0.2 – 0.8)	1.1 (0.5 – 1.9)
Seychelles	0.3 (0.2 – 0.6)	1.1 (0.6 – 1.9)	1.4 (0.8 – 2.4)
Sierra Leone	0.1 (0.0 – 0.2)	5.8 (2.5 – 10.7)	4.9 (2.1 – 9.3)
Singapore	0.8 (0.3 – 1.5)	4.8 (1.9 – 10.0)	5.9 (2.3 – 12.2)
Slovakia	0.0 (0.0 – <0.1)	0.1 (0.0 – 0.2)	0.3 (0.1 – 0.5)
Slovenia	0.1 (0.0 – 0.1)	0.2 (0.1 – 0.4)	0.4 (0.2 – 0.8)
Solomon Islands	0.1 (0.0 – 0.2)	0.1 (0.0 – 0.4)	0.3 (0.1 – 0.8)
Somalia	0.4 (0.1 – 1.0)	2.0 (0.6 – 4.7)	1.1 (0.3 – 2.7)
South Africa	0.9 (0.4 – 1.9)	36.7 (24.1 – 49.4)	41.2 (25.9 – 52.9)
South Korea	0.2 (0.1 – 0.4)	2.8 (1.0 – 6.0)	4.5 (1.8 – 9.5)
South Sudan	1.1 (0.3 – 2.8)	4.3 (1.3 – 9.9)	3.8 (1.1 – 8.9)
Spain	11.1 (3.8 – 23.2)	21.6 (9.1 – 39.5)	27.4 (12.0 – 46.3)
Sri Lanka	0.0 (0.0 – 0.1)	0.1 (0.0 – 0.1)	0.2 (0.1 – 0.3)
Sudan	0.3 (0.1 – 0.5)	1.3 (0.5 – 2.5)	1.8 (0.8 – 3.4)
Suriname	1.5 (0.8 – 2.9)	6.0 (3.4 – 9.9)	7.8 (4.6 – 12.2)
Swaziland	1.4 (0.5 – 2.9)	41.4 (29.4 – 53.8)	45.5 (34.9 – 56.4)
Sweden	1.7 (0.5 – 3.9)	3.7 (0.9 – 9.1)	5.1 (1.3 – 12.4)
Switzerland	8.7 (2.7 – 19.4)	18.9 (6.7 – 37.4)	24.1 (9.0 – 44.5)

Country	1990	2005	2017
Syria	0.0 (0.0 – <0.1)	0.0 (0.0 – <0.1)	0.1 (0.0 – 0.1)
Taiwan	0.0 (0.0 – 0.1)	0.3 (0.2 – 0.5)	0.7 (0.4 – 1.2)
Tajikistan	0.1 (0.0 – 0.1)	0.3 (0.1 – 0.5)	0.6 (0.3 – 1.1)
Tanzania	17.1 (9.5 – 26.0)	17.9 (10.2 – 27.4)	16.1 (9.1 – 24.9)
Thailand	1.5 (0.7 – 2.7)	7.3 (4.2 – 11.9)	11.1 (6.6 – 17.1)
The Bahamas	6.6 (3.6 – 10.3)	10.0 (5.8 – 15.3)	14.9 (9.5 – 21.8)
The Gambia	0.5 (0.2 – 1.0)	6.7 (3.2 – 12.0)	7.4 (3.6 – 12.7)
Timor-Leste	0.7 (0.2 – 1.7)	1.8 (0.6 – 3.9)	1.7 (0.6 – 3.5)
Togo	2.2 (0.8 – 4.4)	12.4 (6.1 – 21.1)	8.7 (4.0 – 15.2)
Tonga	0.0 (0.0 – 0.1)	0.1 (0.0 – 0.1)	0.1 (0.1 – 0.2)
Trinidad and Tobago	2.0 (1.0 – 3.5)	7.3 (4.3 – 11.3)	10.0 (6.0 – 15.4)
Tunisia	0.0 (0.0 – 0.1)	0.2 (0.1 – 0.4)	0.6 (0.3 – 1.2)
Turkey	0.0 (0.0 – <0.1)	0.0 (0.0 – 0.1)	0.1 (0.1 – 0.2)
Turkmenistan	0.2 (0.1 – 0.4)	0.5 (0.2 – 0.8)	0.4 (0.2 – 0.7)
Uganda	15.6 (6.9 – 27.7)	12.2 (5.1 – 22.7)	11.6 (4.3 – 22.1)
Ukraine	1.0 (0.5 – 1.7)	4.6 (2.5 – 7.6)	7.2 (4.1 – 11.6)
United Arab Emirates	0.0 (0.0 – 0.1)	0.3 (0.1 – 0.6)	0.6 (0.2 – 1.4)
United Kingdom	1.8 (0.6 – 4.2)	8.7 (2.5 – 19.9)	14.7 (4.7 – 30.7)
United States	12.0 (6.2 – 19.8)	18.5 (9.1 – 30.7)	24.2 (12.1 – 39.2)
Uruguay	1.7 (0.8 – 2.9)	7.5 (3.9 – 12.6)	12.4 (6.1 – 21.8)
Uzbekistan	0.1 (0.0 – 0.1)	0.5 (0.2 – 0.9)	1.0 (0.5 – 1.8)
Vanuatu	0.1 (0.0 – 0.2)	0.1 (0.0 – 0.3)	0.3 (0.1 – 0.8)
Venezuela	0.4 (0.2 – 0.7)	3.3 (1.8 – 5.4)	6.7 (3.8 – 10.6)
Vietnam	0.2 (0.1 – 0.5)	2.2 (1.1 – 4.0)	3.9 (2.0 – 6.6)

Country	1990	2005	2017
Virgin Islands, U.S.	1.9 (1.0 – 3.1)	2.5 (1.4 – 4.1)	2.9 (1.6 – 4.6)
Yemen	0.1 (0.0 – 0.1)	0.1 (0.0 – 0.2)	0.2 (0.1 – 0.4)
Zambia	12.5 (5.0 – 23.6)	18.7 (8.1 – 32.8)	17.9 (7.2 – 31.1)
Zimbabwe	27.6 (18.5 – 37.6)	37.5 (26.6 – 49.1)	34.5 (24.6 – 44.8)

C. Source Appendix

C1. Incidence data sources

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C3. HIV coinfection data sources

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