Supplementary Online Content

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This supplementary material has been provided by the authors to give readers additional information about their work.

eTable 1. Keywords Used in the Comprehensive Systematic Literature Search

Keywords	(1) epidemiolog*, frequenc*, incidence*, morbidit*, occurren*, prevalence*, probability, rate*, OR statistic*; AND (2) alcohol* embryopath*, alcohol* related* neurodevelopmental* disorder*, alcohol* related* birth defect*, arnd, arbd, fetal* alcohol* effect*, fae, fas, fasd, fetal alcohol syndrome*, fetal alcohol spectrum disorder*, foetal* alcohol* effect, foetal* alcohol syndrome*, foetal* alcohol spectrum disorder*, pfas, partial fetal alcohol syndrome, partial foetal alcohol syndrome, prenatal* alcohol expos*, OR pre-natal* alcohol expos*; AND (3) cohort stud*, cross* sectional stud*, prospective cohort stud* OR retrospective cohort stud*

eTable 2. Diagnostic Breakdown of FASD in the Identified Studies

Diagnostic Breakdown of FASD	Number of Studies
ARBD + ARND + FAS + pFAS	4
ARND + FAS + pFAS	3
FAS + pFAS	9
FAS + other-FASD (not further specified)	6
FASD (breakdown not specified)	2

Abbreviations: ARBD, alcohol-related birth defects; ARND, alcohol-related neurodevelopmental disorder, FAS: fetal alcohol syndrome; FASD, fetal alcohol spectrum disorder; pFAS, partial fetal alcohol syndrome.

eTable 3. Critical Appraisal of the Identified Studies Reporting on the Prevalence of FASD Among Children and Youth in the General Population

Reference	1. Was the sample representative of the target population?		2. Were study participants recruited in an appropriate way?		3. Was the sample size adequate (n≥300)?		4. Were the study subjects and the setting described in detail?		5. Was the data analysis conducted with sufficient coverage of the identified sample?		6. Were objective, standard criteria used for ascertaining FASD?		7. Was the statistical analysis appropriate?	
	Yes	No/ Unclear	Yes	No/ Unclear	Yes	No/ Unclear	Yes	No/ Unclear	Yes	No/ Unclear	Yes	No/ Unclear	Yes	No/ Unclear
Asante & Nelms-Matzke[1]	X		X		X		X		X		X		X	
Barr & Streissguth[2]	X		X		X		X		X		X		X	
Bloch et al.[3]	X		X		X		X		X		X		X	
Chersich et al.[4]	X		X		X		X		X		X		X	
Clarren et al.[5]	X		X		X			X		X	X		X	
Dehaene et al.[6]	X				X		X				X		X	
Elgen et al.[7]	X		X		X		X		X		X		X	
Elliott et al.[8]	X		X		X		X		X		X		X	
Harris & Bucens[9]	X		X		X		X		X		X		X	
Hingson et al.[10]	X		X		X		X		X		X		X	
May et al.[11]	X		X			X	X		X		X		X	
May et al.[12]	X		X		X		X		X		X		X	
May et al.[13]	X		X		X		X		X		X		X	
May et al.[14]	X		X		X		X		X		X		X	
May et al.[15]	X		X		X		X		X		X		X	
May et al.[16]	X		X		X		X		X		X		X	
Olivier et al.[17]	X		X			X	X		X		X		X	
Petković & Barišić[18]	X		X			X	X		X		X		X	
Petković &	X		X		X		X		X		X		X	

Reference	1. Was the sample representative of the target population?		2. Were study participants recruited in an appropriate way?		3. Was the sample size adequate (n≥300)?		4. Were the study subjects and the setting described in detail?		5. Was the data analysis conducted with sufficient coverage of the identified sample?		6. Were objective, standard criteria used for ascertaining FASD?		7. Was the statistical analysis appropriate?	
	Yes	No/ Unclear	Yes	No/ Unclear	Yes	No/ Unclear	Yes	No/ Unclear	Yes	No/ Unclear	Yes	No/ Unclear	Yes	No/ Unclear
Barišić[19]														
Poitra et al.[20]	X		X		X			X	X		X		X	
Serreau et al.[21]	X		X		X		X		X		X		X	
Toutain & Lejeune[22]	X		X		X		X		X		X		X	
Urban et al.[23]	X		X		X		X		X		X		X	
Urban et al.[24]	X		X		X		X		X		X		X	

Abbreviation: FASD, fetal alcohol spectrum disorder.
Note. The absence of an “X” means that the respective criterion was "not applicable".

eTable 4. Prevalence of FASD Among Children and Youth in the General Population by Country and WHO Region in 2012

Country	Prevalence Estimate (per 1000 Population)	95% CI Lower	95% CI Upper
African Region			
Algeria	3.4	2.0	5.2
Angola	9.2	5.6	13.9
Benin	6.2	3.8	9.5
Botswana	4.5	2.7	6.9
Burkina Faso	8.9	5.5	13.5
Burundi	13.0	8.0	19.7
Cameroon	9.9	6.1	15.1
Cape Verde	6.3	3.9	9.7
Central African Republic	7.3	4.4	11.1
Chad	5.7	3.4	8.7
Comoros	5.7	3.4	8.7
Congo, Democratic Republic of the	7.8	4.8	11.9
Congo, Republic of the	5.6	3.4	8.5
Equatorial Guinea	1.7	1.0	2.7
Eritrea	5.8	3.5	8.9
Ethiopia	6.2	3.7	9.5
Gabon	7.0	4.2	10.7
Gambia	7.3	4.4	11.1
Ghana	10.2	0.0	23.2
Guinea	5.7	3.4	8.7
Guinea Bissau	7.0	4.3	10.7
Ivory Coast	7.0	4.3	10.7
Kenya	6.1	3.7	9.3
Lesotho	7.2	4.4	11.0
Liberia	7.9	4.8	12.1
Madagascar	6.1	3.7	9.4
Malawi	6.2	3.7	9.5
Mali	5.6	3.3	8.5
Mauritania	5.2	3.1	8.0
Mauritius	3.6	2.2	5.6
Mozambique	6.6	4.0	10.1
Namibia	11.2	6.8	16.9
Niger	5.8	3.5	8.8
Nigeria	6.4	0.6	13.5
Rwanda	14.2	8.8	21.5
Sao Tome & Principe	7.9	4.8	12.0
Senegal	5.5	3.3	8.4
Seychelles	2.7	1.6	4.1
Sierra Leone	11.6	7.1	17.6
South Africa*	111.1	71.1	158.4
South Sudan	5.5	3.3	8.4
Swaziland	5.7	3.5	8.7
Tanzania, United Republic of	11.9	7.3	18.0
Togo	6.4	3.9	9.8
Uganda	16.2	10.0	24.3
Zambia	14.6	0.2	32.0
Zimbabwe	6.5	3.9	9.9
Eastern-Mediterranean Region			
Afghanistan	0.2	0.0	1.7

Country	Prevalence Estimate (per 1000 Population)	95% CI Lower	Upper
Bahrain	0.0	0.0	0.3
Djibouti	0.2	0.0	1.8
Egypt	0.1	0.0	1.1
Iran	0.1	0.0	0.9
Iraq	0.1	0.0	0.9
Jordan	0.1	0.0	1.1
Kuwait	0.0	0.0	0.0
Lebanon	0.1	0.0	1.0
Libya	0.1	0.0	0.6
Morocco	0.2	0.0	1.4
Oman	0.0	0.0	0.2
Pakistan	0.2	0.0	1.5
Qatar	0.0	0.0	0.0
Saudi Arabia	0.0	0.0	0.1
Somalia	0.2	0.0	1.9
Sudan	0.2	0.0	1.9
Tunisia	0.1	0.0	1.1
United Arab Emirates	0.0	0.0	0.1
Yemen	0.2	0.0	1.6
European Region			
Albania	15.3	9.7	22.6
Armenia	14.6	9.2	21.7
Austria	10.3	6.7	14.9
Azerbaijan	7.4	4.6	11.2
Belarus	36.6	23.7	53.2
Belgium	11.8	7.6	17.0
Bosnia and Herzegovina	13.7	8.6	20.6
Bulgaria	25.7	16.7	37.2
Croatia*	53.3	30.9	81.2
Cyprus	16.3	10.6	23.5
Czech Republic	28.5	18.6	41.2
Denmark	36.0	20.1	57.6
Estonia	28.3	18.5	40.8
Finland	12.4	8.0	17.9
France*	10.4	0.0	33.7
Georgia	18.3	11.7	27.0
Germany	20.3	0.0	55.0
Greece	16.6	10.8	24.0
Hungary	24.0	15.7	34.6
Iceland	7.0	4.5	10.1
Ireland	47.5	28.0	73.6
Israel	5.5	0.0	23.5
Italy*	45.0	35.1	56.1
Kazakhstan	12.2	7.8	17.9
Kyrgyzstan	14.9	9.3	22.3
Latvia	25.4	16.5	36.6
Lithuania	19.7	0.0	51.7
Luxembourg	1.6	1.0	2.5
Macedonia, Republic of	13.0	8.2	19.3
Malta	15.8	10.3	22.8
Moldova, Republic of	23.3	14.9	34.1
Montenegro	16.1	10.3	23.6
Netherlands	14.2	7.6	23.1

Country	Prevalence Estimate (per 1000 Population)	95% CI Lower	Upper
Norway	17.8	4.1	35.2
Poland	19.2	12.5	27.8
Portugal	23.3	15.2	33.6
Romania	22.3	14.5	32.3
Russian Federation	28.7	11.8	51.1
Serbia, Republic of	21.7	14.0	31.6
Slovakia	19.2	12.5	27.7
Slovenia	21.2	13.8	30.5
Spain	11.8	1.7	24.3
Sweden	7.4	1.5	14.8
Switzerland	25.7	16.0	38.6
Tajikistan	12.1	7.4	18.3
Turkey	5.9	3.7	9.0
Turkmenistan	8.7	5.4	13.1
Ukraine	26.8	11.6	46.9
United Kingdom	32.4	20.0	49.0
Uzbekistan	13.2	8.2	19.8
Region of The Americas			
Antigua and Barbuda	7.6	4.8	11.2
Argentina	10.2	6.5	15.0
Bahamas	9.5	6.0	14.0
Barbados	11.5	7.4	17.0
Belize	7.5	4.8	11.0
Bolivia	8.3	5.3	12.1
Brazil	12.0	6.5	19.5
Canada	7.9	2.8	14.5
Chile	8.3	5.3	12.3
Colombia	7.1	4.6	10.4
Costa Rica	6.5	4.2	9.6
Cuba	3.8	2.4	5.5
Dominica	11.5	7.4	16.8
Dominican Republic	9.5	6.1	13.9
Ecuador	7.0	4.5	10.2
El Salvador	6.5	4.2	9.6
Grenada	18.4	11.7	27.0
Guatemala	5.1	3.3	7.5
Guyana	14.3	9.2	20.9
Haiti	11.7	7.6	17.1
Honduras	8.4	5.4	12.3
Jamaica	7.4	4.7	10.8
Mexico	1.0	0.0	2.4
Nicaragua	7.0	4.5	10.3
Panama	9.2	5.9	13.5
Paraguay	14.1	9.1	20.6
Peru	9.8	6.3	14.3
Puerto Rico	2.7	1.7	4.0
St Kitts and Nevis	7.5	4.8	11.0
St Lucia	17.2	11.0	25.2
St Vincent and Grenadines	11.7	7.5	17.2
Suriname	8.0	5.1	11.7
Trinidad and Tobago	4.4	2.8	6.6
United States of America*	15.2	7.5	25.3

Country	Prevalence Estimate (per 1000 Population)	95% CI Lower	Upper
Uruguay	6.9	4.4	10.1
Venezuela	7.8	5.0	11.5
South-East Asia Region			
Bangladesh	1.6	0.0	9.0
Bhutan	1.3	0.0	7.3
India	1.5	0.0	8.5
Indonesia	1.2	0.0	6.6
Maldives	1.1	0.0	6.2
Myanmar	1.5	0.0	8.5
Nepal	1.7	0.0	9.3
Sri Lanka	1.2	0.0	6.7
Thailand	1.1	0.0	6.1
Timor-Leste	1.7	0.0	9.3
Western Pacific Region			
Australia*	0.6	0.0	2.8
Brunei Darussalam	0.4	0.2	0.5
Cambodia	12.1	7.6	18.1
China	5.1	1.6	9.6
Fiji	8.9	5.5	13.4
Japan	6.3	3.2	10.4
Kiribati	11.0	6.8	16.5
Korea, Republic of	16.9	7.7	29.0
Laos	15.7	10.0	23.2
Malaysia	4.2	2.6	6.3
Marshall Islands	9.7	6.0	14.7
Micronesia	10.7	6.6	16.0
Mongolia	13.7	8.8	20.2
New Zealand	21.0	12.0	33.1
Palau	12.0	7.7	17.5
Papua New Guinea	11.6	7.3	17.5
Philippines	13.1	8.3	19.3
Samoa	8.9	5.5	13.4
Singapore	0.4	0.3	0.7
Solomon Islands	11.0	6.8	16.6
Tonga	9.5	5.9	14.3
Tuvalu	10.6	6.6	15.9
Vanuatu	10.4	6.4	15.6
Viet Nam	9.4	5.8	14.2

*Estimate based on a meta-analysis of the current literature.

Note. Prediction of FASD prevalence for Andorra, Cook Islands, Monaco, Nauru, Niue, North Korea, San Marino, and Syrian Arab Republic was not possible due to the unavailability of data on alcohol use during pregnancy for these countries.

eTable 5. Pooled Prevalence of FASD Among Children and Youth in the General Population and the Results of the Heterogeneity and Publication Bias Tests by Country and WHO Region

Country (WHO Region)	# of Studies	Prevalence (per 1000 Population)	95% CI		Heterogeneity Tests				Publication Bias Tests	
			Lower	Upper	I^2 Test	Q Statistic	df (Q Statistic)	p-value (Q Statistic)	p-value (rank test)	p-value (Regression Test)
African Region										
South Africa	6[4,12,14,17,23,24]	111.1	71.1	158.4	96.2%	107.1	5	<0.001	0.136	0.130
European Region										
Croatia	2[18,19]	53.3	30.9	81.2	73.8%	3.8	1	0.051	-	-
France	4[3,6,21,22]	10.4	0.0	33.7	99.7%	348.9	3	<0.001	0.333	<0.001
Italy	2[11,13]	45.0	35.1	56.1	0.0%	0.3	1	0.571	-	-
Region of The Americas										
United States of America	6[2,5,10,15,16,20]	15.2	7.5	25.3	93.5%	71.6	5	<0.001	0.272	0.240
Western Pacific Region										
Australia	2[8,9]	0.6	0.0	2.8	99.1%	113.2	1	<0·001	-	-

Abbreviations: df, degrees of freedom; WHO, World Health Organization.

eTable 6. Comparison of the Prevalence of FASD Among Special Populations, Based on Select Studies, to the Global Prevalence Among Children and Youth in the General Population

Reference	Country (State/Province/ Territory)	Study Period	Population	Method	Prevalence of FASD (per 1000 Population)			Fold Increase[b]
					Point Estimate	95% CI[a]		
						Lower	Upper	
Fitzpatrick et al.[25]	Australia (Western)	2010-11	Aboriginal population	ACA	120.4	65.7	197.0	15.6
Strömland et al.[26]	Brazil (Recife)	n/a	Children residing in an orphanage	ACA	170.2	100.5	261.6	22.1
Fast et al.[27]	Canada (British Columbia)	1995-96	Correctional population	Clinic-based	233.4	185.7	286.8	30.3
Robinson et al.[28]	Canada (British Columbia)	1984-85	Aboriginal population	ACA	189.7	122.8	272.9	24.6
Tenenbaum et al.[29]	Israel	n/a	Pre-adoption & foster care children	ACA	40.0	11.0	99.3	5.2
De Vries et al.[30]	South Africa (Western Cape)	n/a	Rural population with a low socioeconomic status	ACA	182.4	165.1	200.6	23.7
Landgren et al.[31]	Sweden	n/a	Adoptees from Eastern Europe (Estonia, Latvia, Poland Romania, Russia)	ACA	521.1	399.2	641.2	67.7
Bell & Chimata[32]	United States of America (Chicago)	2013-14	Psychiatric care population	Clinic-based	142.4[c]	115.6	172.6	18.5
Chasnoff et al.[33]	United States of America (Illinois)	n/a	Foster and adopted youth referred to a children's mental health centre	Clinic-based	285.2	247.7	325.0	37.0

Abbreviations: ACA, active case ascertainment; FASD, fetal alcohol spectrum disorder.
[a] Estimated based on an exact binomial distribution.
[b] Compared to the prevalence of FASD among the general population (7.7 per 1,000; 95% CI: 4.9–11.7 per 1,000).
[c] Prevalence of Neurobehavioral Disorder Associated with Prenatal Alcohol Exposure (ND-PAE[34]).

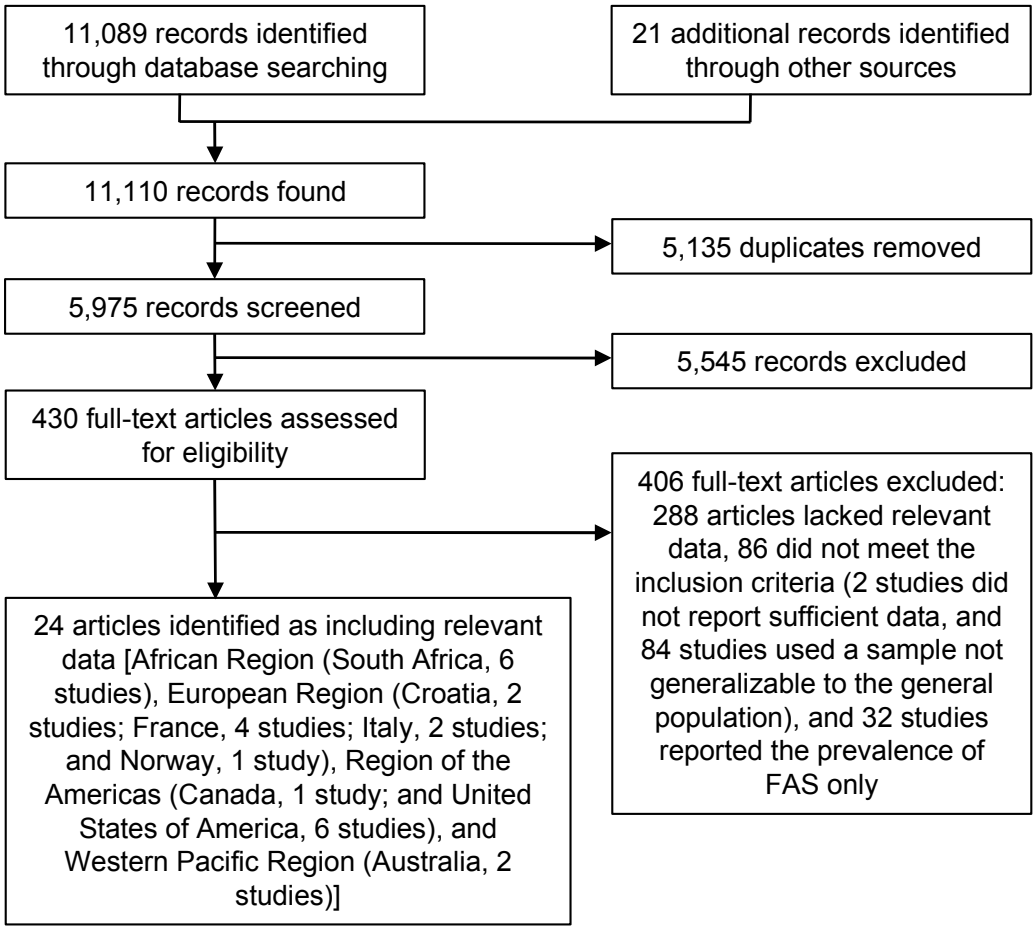
eMethods. Estimation of the Quotient of the Average Number of Women Who Consumed Alcohol During Pregnancy per 1 Case of FASD

The data on the prevalence of FASD for Australia, Croatia, France, Italy and the United States were linked to data on the prevalence of alcohol use during pregnancy for each respective country. Based on these values, the best estimator for the number of women drinking during their pregnancy that led to one FASD birth ($N_{drinking\_woman:FASD}$) in n countries is:

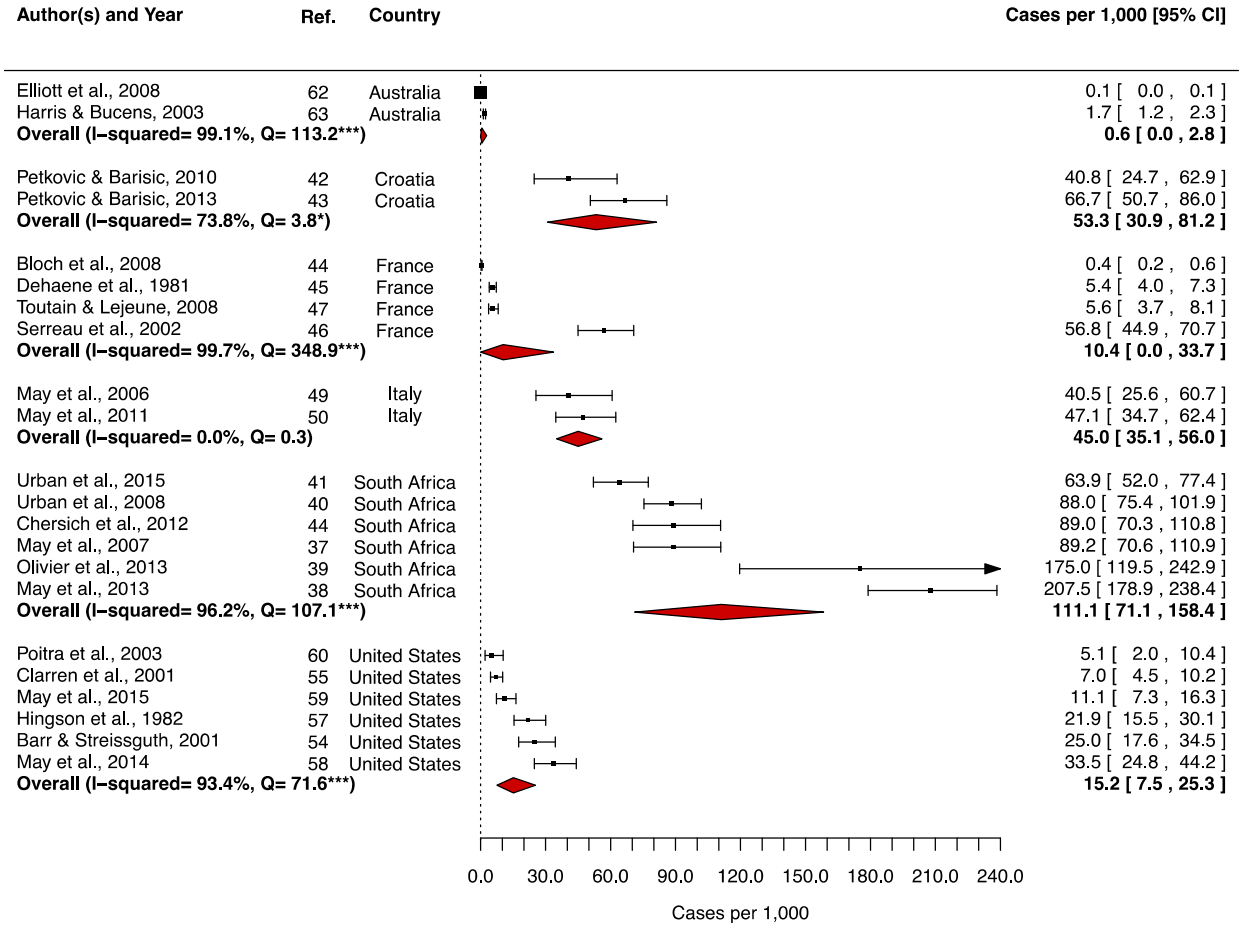
$$N_{drinking\_woman:FASD} = \frac{\sum_{i=1}^{n} P_{drk_i} \cdot N_{births_i}}{\sum_{i=1}^{n} P_{FASD_i} \cdot N_{births_i}}$$

Where P_{drk_i} is the prevalence of mothers consuming alcohol during their pregnancy for country i, N_{births_i}, the number of births in country i, and P_{FASD_i} the prevalence of FASD in country i. This model assumes that each mother gives birth to one single child.

eFigure 1. Schematic Diagram Depicting the Search Strategy Used



eFigure 2. Forest Plot of the Prevalence of FASD Among Children and Youth in the General Population in Australia, Croatia, France, Italy, South Africa, and the United States[a]



[a] The size of the box around the point estimate is representative of the weight of the estimate used in calculating the aggregated point estimate.

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