

From: Joseph Cotruvo ([REDACTED])
Sent: Tuesday, September 13, 2022 10:53 AM
To: Brennan, Thomas <Brennan.Thomas@epa.gov>
Subject: PFAS

Dear Dr Brennan,

The SAB is an essential part of the EPA decision process on technical matters to assure the quality of the science. The recent assessment and HA's for PFOA and PFOS relied on Grandjean et al indicating an inverse relationship between antibody titers in child blood and PFOA and PFOS. That is plausible since those chemicals are known to bind to proteins in blood. However, that measurement apparently has no epidemiological relationship with actual diphtheria and tetanus in populations e.g. USA.

So, the EPA ppq HA is apparently protecting against a non-existing actual risk. EPA needs another more plausible basis for determining "safe" levels of PFOA and PFOS. Was the SAB aware of these CDC data when they reviewed the EPA assessments? If not, please make them aware of the data collected over the many years in the US population approaching 330 million people. There is no better epidemiology than this.

Regards,

Joseph Cotruvo (was Director of Drinking Water Standards Division after SDWA).

This is the CDC Infectious disease table showing essentially no diphtheria in the USA. High blood concentration of PFOA and PFOS probably around 2000. Now 70-90% lower.

The Tetanus data is more diffuse in the CDC data files. CDC said that it was an "uncommon disease" and cases were primarily among unvaccinated people.

<https://www.cdc.gov/vaccines/pubs/pinkbook/tetanus.html>

Some CDC quotes

After the 1940s, reported tetanus incidence rates declined steadily. Since the mid-1970s, about 50 to 100 cases (approximately 0.05 cases per 100,000) have been reported annually in the United States. More recently, from 2009–2018, an average of 29 (range 18–37) cases were reported per year. Of the 297 cases reported during this 10-year timeframe, there were 19 deaths, all in adults age 55 years or older. In 2018, 23 tetanus cases were reported, with no deaths.

Tetanus Secular Trends in the United States

500-600 cases annually before vaccine

Since the mid-1970s, ~50-100 cases annually In 2018, 23 cases were reported with no deaths

Susan Goldhaber's article in ASCH

<https://www.acsh.org/news/2022/08/17/pulling-back-curtain-epa%E2%80%99s-pfas-health-advisories-%C2%A0-16493>

Table 10. Selected nationally notifiable disease rates and number of new cases: United States, selected years 1950–2018

Excel version (with more data years and standard errors when available): <https://www.cdc.gov/nchs/hus/contents2019.htm#Table-010>

[Data are based on reporting by state health departments]

Disease	1950	1960	1970	1980	1990	2000	2010	2017	2018
New cases per 100,000 population									
Acute hepatitis A viral infection	---	---	27.87	12.84	12.64	4.91	0.54	1.03	3.81
Acute hepatitis B viral infection	---	---	4.08	8.39	8.48	2.95	1.10	1.05	1.02
Acute hepatitis C viral infection ¹	---	---	---	---	1.03	1.17	0.29	1.36	1.54
Diphtheria	3.83	0.51	0.21	0.00	0.00	0.00	—	—	0.00
<i>Haemophilus influenzae</i> , invasive	---	---	---	---	---	0.51	1.03	1.70	1.70
Lyme disease ²	---	---	---	---	---	---	9.86	13.18	10.34
Measles (Rubeola)	211.01	245.42	23.23	5.96	11.17	0.03	0.02	0.04	0.11
Meningococcal disease	---	---	1.23	1.25	0.99	0.83	0.27	0.11	0.10
Mumps	---	---	55.55	3.86	2.17	0.13	0.85	1.88	0.77
Pertussis (whooping cough)	79.82	8.23	2.08	0.76	1.84	2.88	8.97	5.83	4.77
Poliomyelitis, paralytic ³	---	1.40	0.02	0.00	0.00	—	—	—	—
Rubella (German measles)	---	---	27.75	1.72	0.45	0.06	0.00	0.00	0.00
Salmonellosis, excluding typhoid fever	---	3.85	10.84	14.88	19.54	14.51	17.73	16.67	18.64
Shigellosis	15.45	6.94	6.79	8.41	10.89	8.41	4.82	4.58	4.99
Spotted fever rickettsiosis ⁴	---	---	0.19	0.52	0.26	0.18	0.65	1.93	1.71
Tuberculosis ⁵	---	30.83	18.28	12.25	10.33	6.01	3.64	2.80	2.76
Sexually transmitted diseases ⁶ :									
Syphilis ⁷	146.02	68.78	44.80	30.30	54.32	11.20	14.85	31.19	35.32
Primary and secondary	16.73	9.06	10.80	12.00	20.26	2.12	4.46	9.41	10.76
Early, nonprimary and nonsecondary	39.71	10.11	8.00	8.90	22.19	3.35	4.41	10.44	11.83
Unknown or late	70.22	45.91	24.70	9.20	10.32	5.53	5.86	11.05	12.32
Congenital ⁸	368.30	103.70	52.30	7.70	92.95	14.29	9.68	23.70	33.10
Chlamydia ⁹	---	---	---	---	160.19	251.38	423.62	524.55	539.93
Gonorrhea ¹⁰	192.50	145.40	294.20	442.10	276.43	128.67	100.19	170.58	179.11
Chancroid	3.34	0.94	0.70	0.30	1.69	0.03	0.01	0.00	0.00
Number of new cases									
Acute hepatitis A viral infection	---	---	56,797	29,087	31,441	13,397	1,670	3,365	12,474
Acute hepatitis B viral infection	---	---	8,310	19,015	21,102	8,036	3,374	3,409	3,322
Acute hepatitis C viral infection ¹	---	---	---	---	2,553	3,197	849	4,225	4,768
Diphtheria	5,796	918	435	3	4	1	—	—	1
<i>Haemophilus influenzae</i> , invasive	---	---	---	---	---	1,398	3,151	5,548	5,573
Lyme disease ²	---	---	---	---	---	---	30,158	42,743	33,666
Measles (Rubeola)	319,124	441,703	47,351	13,506	27,786	86	63	120	375
Meningococcal disease	---	---	2,505	2,840	2,451	2,256	833	353	327
Mumps	---	---	104,953	8,576	5,292	338	2,612	6,109	2,515
Pertussis (whooping cough)	120,718	14,809	4,249	1,730	4,570	7,867	27,550	18,975	15,609
Poliomyelitis, paralytic ³	---	2,525	31	4	6	—	—	—	—
Rubella (German measles)	---	---	56,552	3,904	1,125	176	5	7	4
Salmonellosis, excluding typhoid fever	---	6,929	22,096	33,715	48,603	39,574	54,424	54,285	60,999
Shigellosis	23,367	12,487	13,845	19,041	27,077	22,922	14,786	14,912	16,333
Spotted fever rickettsiosis ⁴	464	---	380	1,163	651	495	1,985	6,248	5,544
Tuberculosis ⁵	---	55,494	37,137	27,749	25,701	16,377	11,182	9,105	9,025
Sexually transmitted diseases ⁶ :									
Syphilis ⁷	217,558	122,538	91,382	68,832	135,590	31,618	45,844	101,584	115,045
Primary and secondary	23,939	16,145	21,982	27,204	50,578	5,979	13,774	30,644	35,063
Early, nonprimary and nonsecondary	59,256	18,017	16,311	20,297	55,397	9,465	13,604	34,013	38,539
Unknown or late	113,569	81,798	50,348	20,979	25,750	15,594	18,079	35,992	40,137
Congenital ⁸	13,377	4,416	1,953	277	3,865	580	387	935	1,306
Chlamydia ⁹	---	---	---	---	323,663	709,452	1,307,893	1,708,569	1,758,668
Gonorrhea ¹⁰	286,746	258,933	600,072	1,004,029	690,042	363,136	309,341	555,608	583,405
Chancroid	4,977	1,680	1,416	788	4,212	78	24	7	3

See footnotes at end of table.