

1. Background

Rationale

- The ubiquitous presence of PFAS in the human body, as demonstrated by the National Health and Nutrition Examination Survey, suggests [exposure sources beyond contaminated water](#) play an important role
- Sources in the residential environment may include building materials, consumer products, food packaging
- Data on levels of PFAS chemicals in multiple media are required to [identify, understand, and mitigate human-exposure pathways](#)

Objectives

- [Compile evidence](#) for important pathways of exposure to PFAS chemicals
- [Review literature](#) reporting measured occurrence of PFAS chemicals in exposure media
- [Identify data gaps](#) that may be filled by future research
- Make the occurrence database from the literature review [accessible to the public](#) for additional research

3. Results of Evidence Mapping

Fig. 1. Counts of Papers and What They Sampled

- The [most frequently studied](#) were:
 - PFOA (96%), PFOS (93%)
 - Food (41%), Drinking Water (25%)
- Relatively [less studied](#) were:
 - PFBA (40%), PFBS (53%)
 - Ambient Air (4%), Food Packaging (5%), Indoor Air (5%), Consumer Products (7%)

Medium	PFBA	PFBS	PFDA	PFHxA	PFHxS	PFNA	PFOA	PFOS
Human Blood/Serum/Urine + High-priority Exposure Medium (Full Extractions)	3	5	6	5	15	10	15	15
Indoor Air	1	3	5	4	6	7	9	7
Dust	10	15	18	15	21	20	24	24
Drinking Water	23	32	30	36	38	34	47	46
Food	20	35	50	49	56	56	76	78
Food Packaging	5	4	6	5	4	5	9	7
Products	9	6	10	11	7	11	14	8
Ambient Air	4	5	4	4	7	5	7	8
Soil	14	16	12	17	20	13	24	25

Fig. 2. Counts of Papers Reporting Concurrent Measurements in Biomatrices and Other Media

- These studies were [rare](#) (15 studies, or 8%)
- These primarily focused on food and drinking water

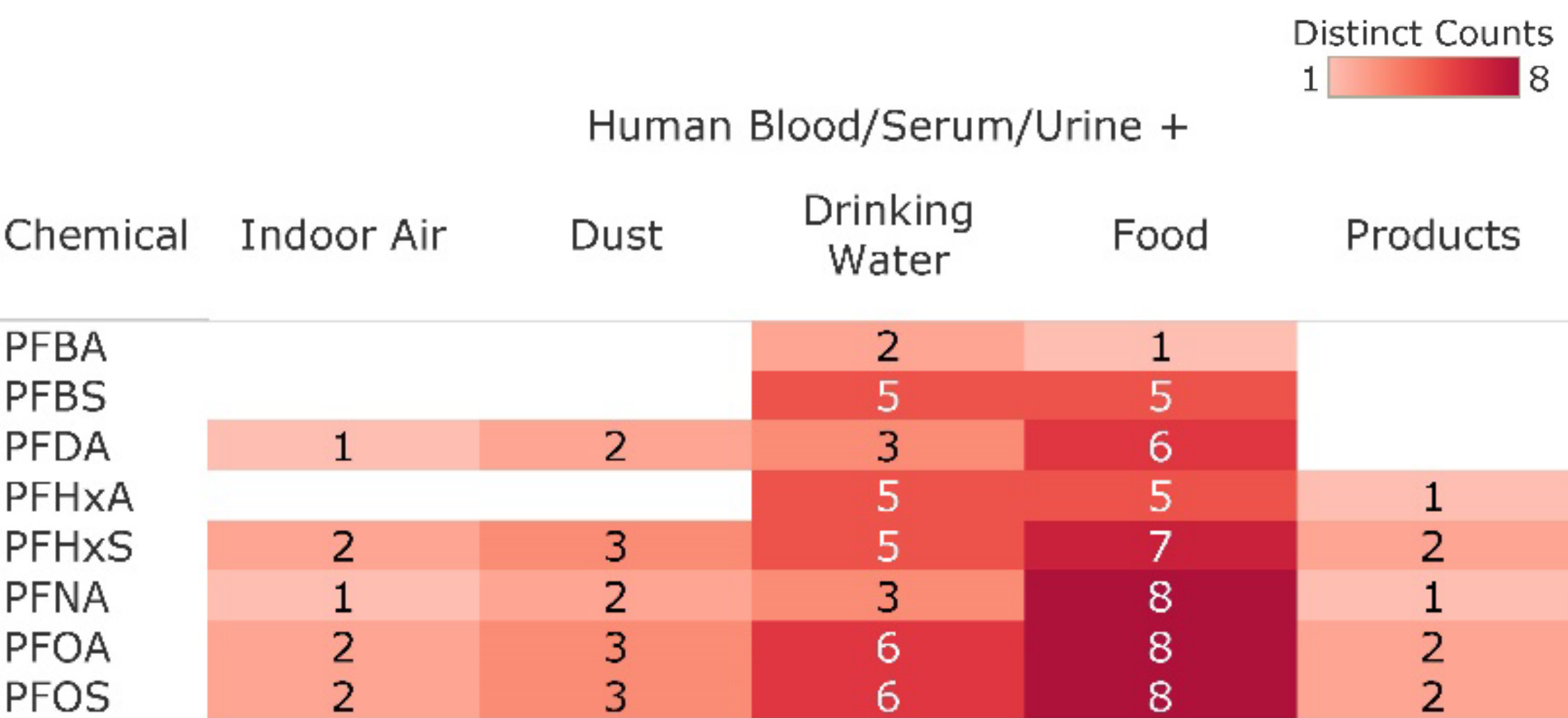
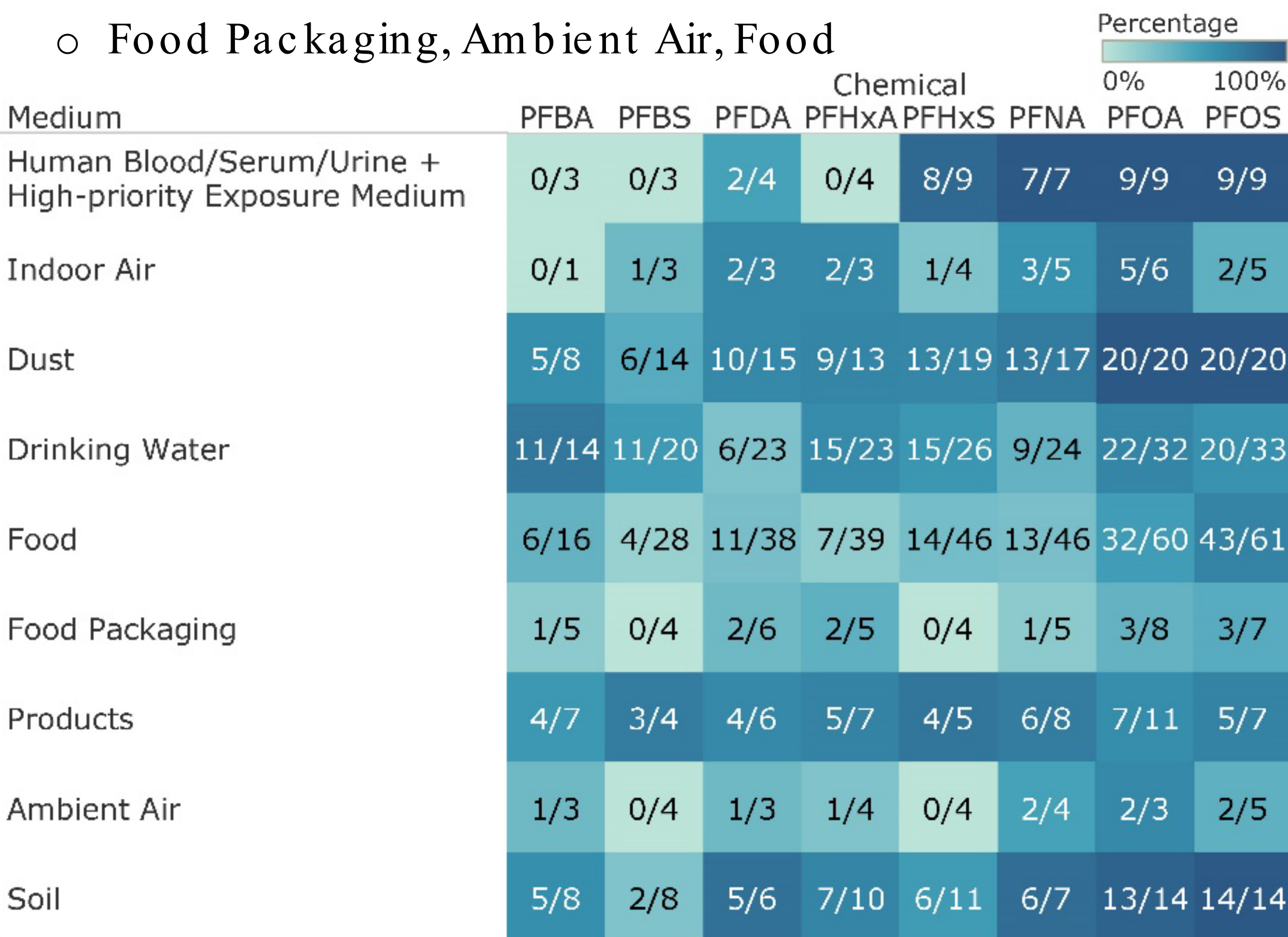


Fig. 3. Counts of Papers Reporting: [Detection Frequencies ≥ 50%] / [Any Detection Frequencies]

- The [most frequently detected](#) were:
 - PFOA, PFOS
 - Indoor Dust, Soil, Biomatrices, Consumer Products
- Relatively [less detected](#) were:
 - PFBS, PFDA, PFHxA
 - Food Packaging, Ambient Air, Food



4. Potential Applications

- We procured a database with over [14,000 rows of study meta-data and quantitative information](#) from peer-reviewed studies
- [Potential uses of the database for future work](#):
 - Enable or [improve interpretation of PFAS biomonitoring](#)
 - Inform understanding of [important PFAS sources and pathways of personal exposure](#), including through modeling
 - [Chemicals and media currently not well studied](#) might benefit from further investigation
 - Future studies might focus on those [chemicals more often detected in particular media](#)
 - Identify where a focused systematic review of data subsets might [answer specific research questions](#)
 - Conduct meta-analyses to [synthesize results across multiple studies](#)
 - We encourage database users to conduct their own critical appraisal of the data to suit their specific research needs

*Public accessibility is pending manuscript preparation.

The U.S. Environmental Protection Agency (EPA) through its Office of Research and Development funded and managed the research described here. The views expressed in this poster are those of the author(s) and do not necessarily reflect the views or policies of the EPA.