Program Update and Planning

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Presentation to the Scientific Guidance Panel Meeting

March 25, 2022

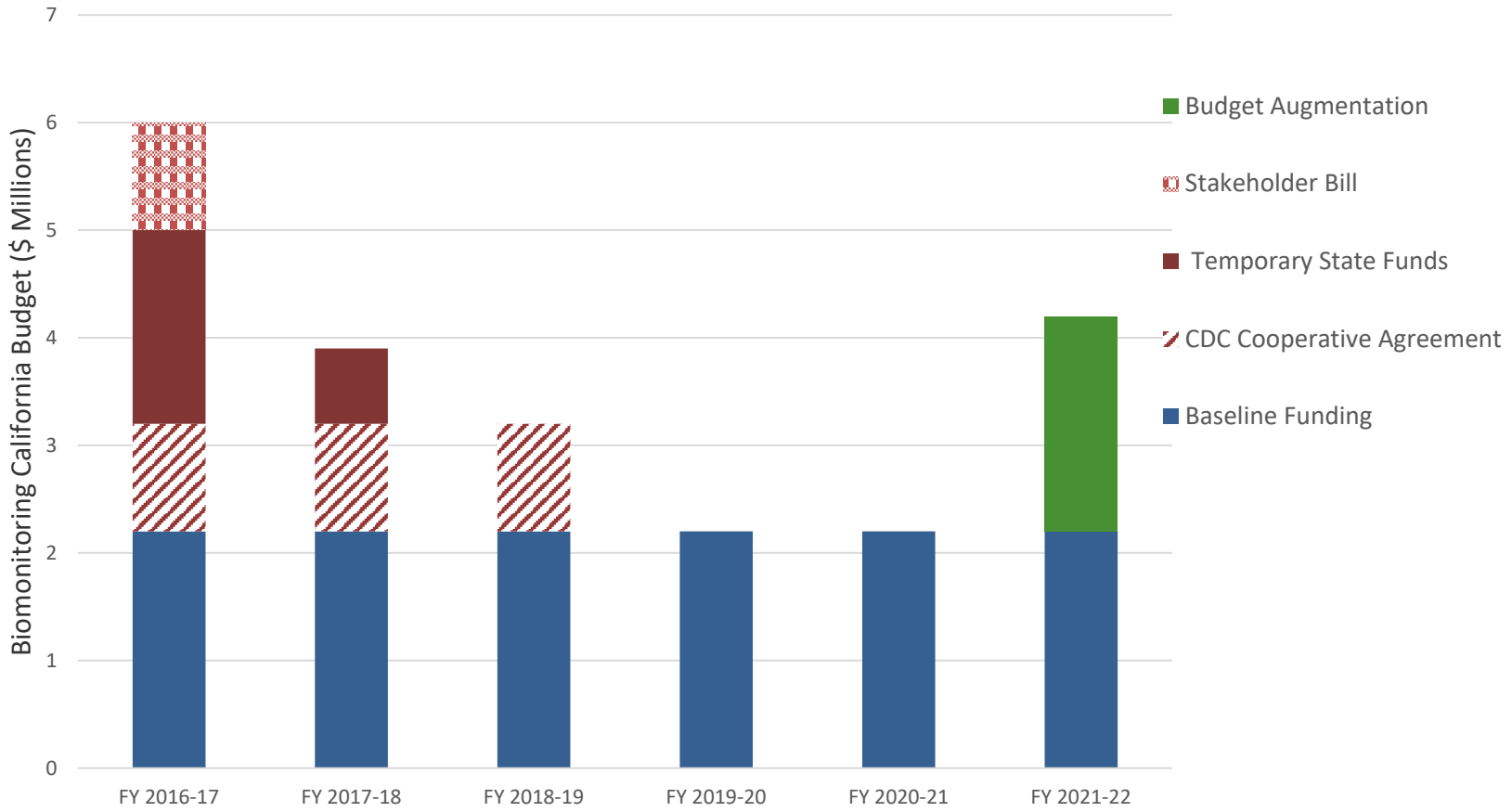
CDPH California Department of PublicHealth

Center for Healthy Communities
EHIB/Biomonitoring California

Program Update and Planning

- Administrative updates
- Current projects
- Upcoming work

Program Budget Update*



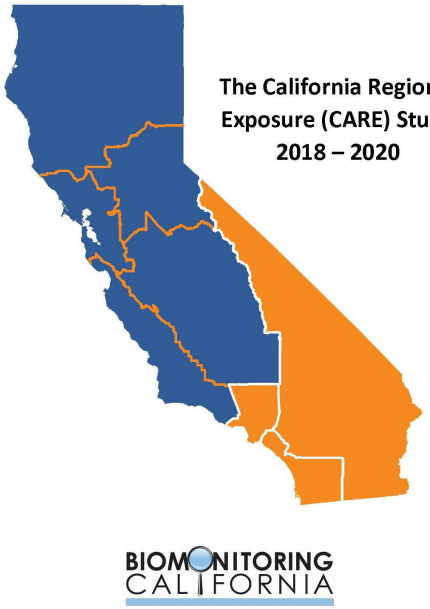
*For more information on fund sources, please see Slide #26.

Staff Updates

Faye Andrews	Jagdish Dhaliwal	Susan Hurley	Roshni Sarala
Dinesh Adhikari	Joginder Dhaliwal	Simon Ip	Jianwen She
Kathleen Attfield	Dina Dobraca	Shoba Iyer*	Dan Sultana
Hyoung Gee Baek	Jeff Fowles	Stephanie Jarmul	Darcy Tarrant
Paramjit Behniwal	Qi Gavin	Duyen Kauffman	Miaomiao Wang
Key-Young Choe	Songmei Gao	Alveen Kumar	Shizhong Wang
Sabrina Crispo Smith	Ranjit Gill	June-Soo Park	Yunzhu Wang
Adam D'Amico	Cheryl Holzmeyer	Myrto Petreas	Nerissa Wu
Josephine DeGuzman	Sara Hoover	Martha Sandy	

* Departing staff

California Regional Exposure (CARE) Study



- Draft report in progress
- Will include weighted and unweighted data and demographic trends
- Projected release: Fall 2022

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Program Priorities: Scientific Guidance Panel Input

- Mitigate environmental health inequities
- Conduct intervention studies to identify impacts of public policy and mitigation strategies
- Evaluate exposures associated with climate change
- Utilize non-targeted screening to identify new exposures of concern
- Conduct meaningful surveillance within program resources

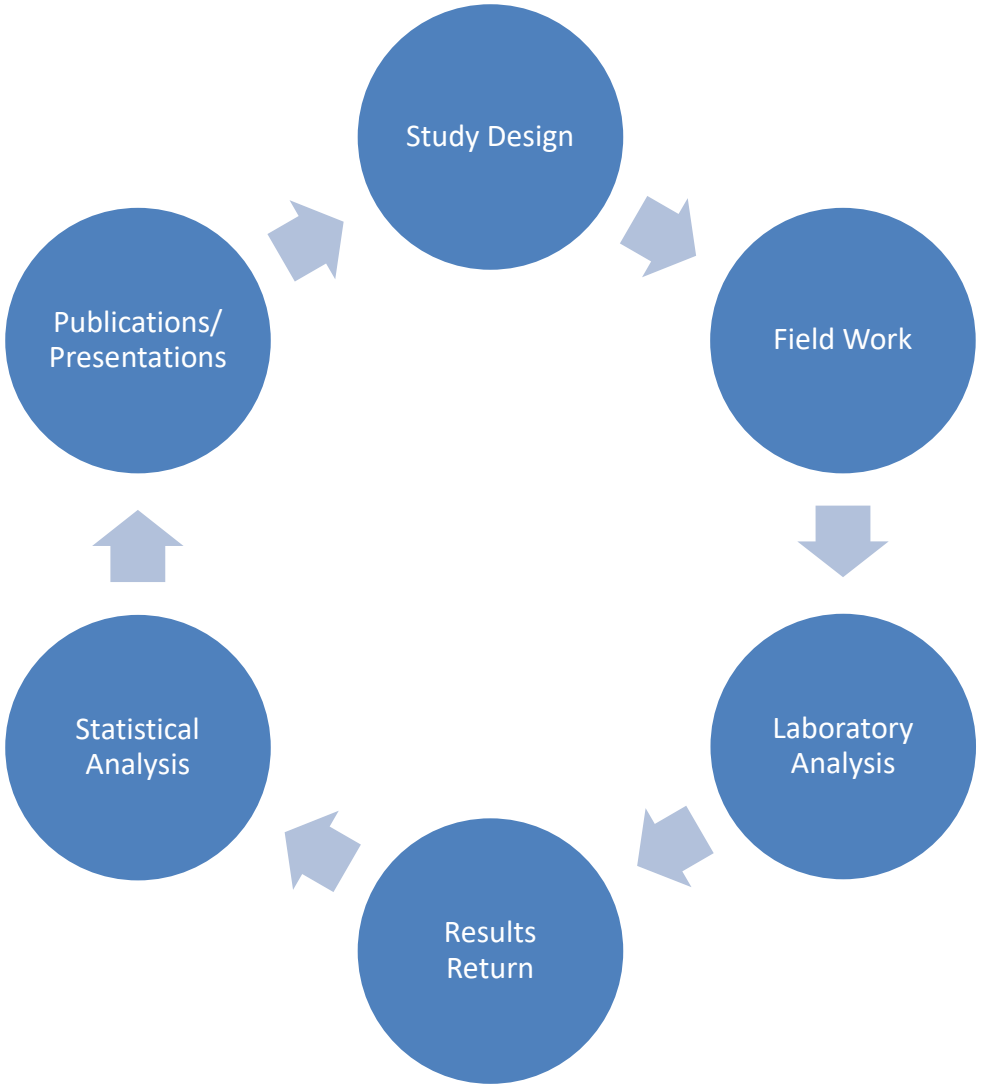
Program Priorities: Stakeholder Input

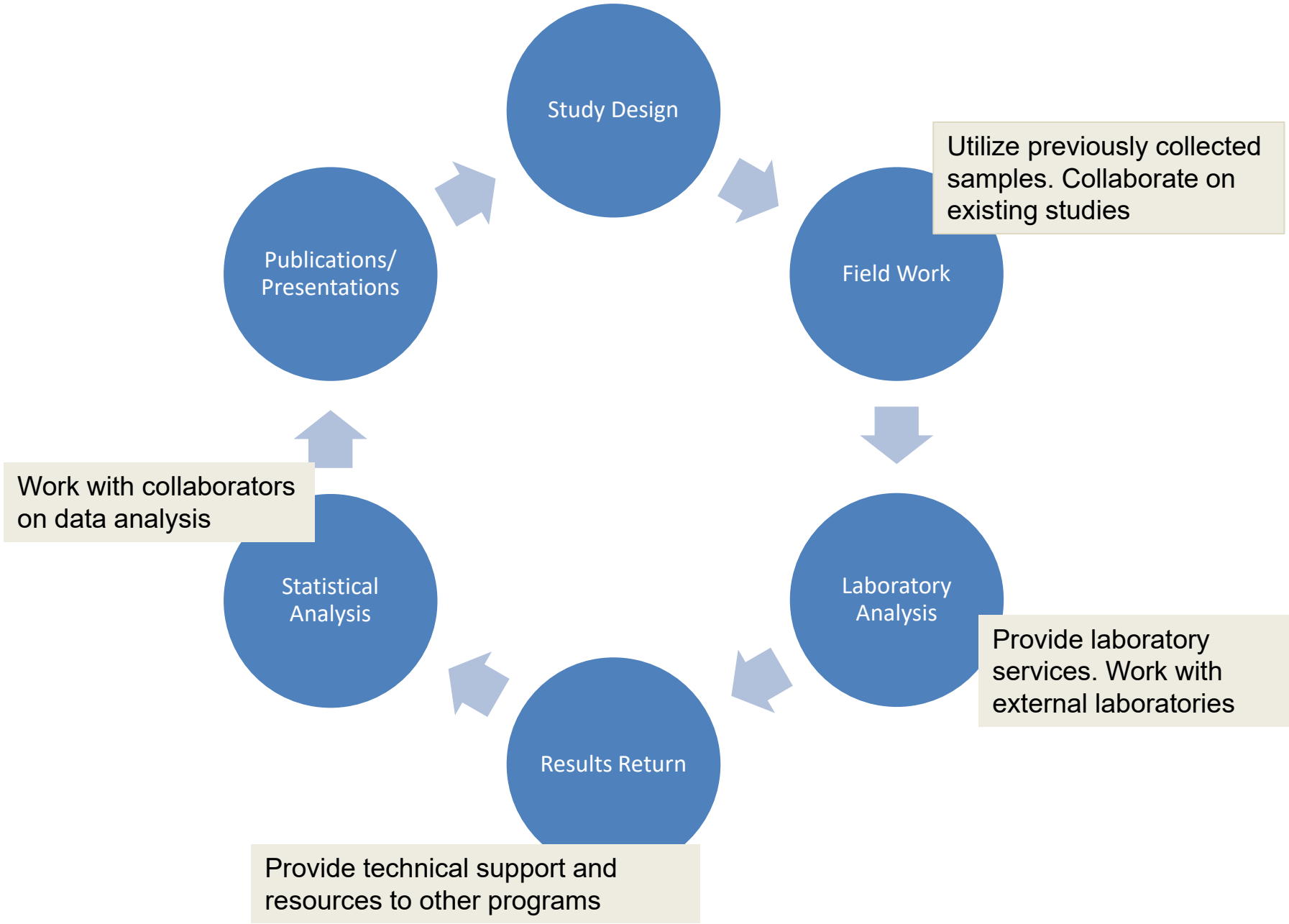
- Environmental justice/equity
  - Conduct surveillance to identify inequities
  - Build community capacity
  - Design studies that lead to policies that reduce exposures
- Conduct community-focused and community-based participatory studies
- Monitor temporal trends
- Include more chemicals in studies

Program Goals

- Evaluate the presence of chemicals in a representative sample of Californians
- Establish trends in the levels of chemicals over time
  - Assess effectiveness of public health efforts and regulatory programs
  - Assess exposures related to climate change
- Identify highly exposed communities
- Evaluate strategies for exposure reduction
- Expand the reach and sustainability of the program

Elements of a Biomonitoring Project




Study Design
Utilize previously collected samples. Collaborate on existing studies
Field Work
Laboratory Analysis
Provide laboratory services. Work with external laboratories
Results Return
Provide technical support and resources to other programs
Statistical Analysis
Work with collaborators on data analysis
Publications/ Presentations

Examples of Available Biomarker Data

	Sample Collection	N*	Metals	PFASs	Phenols	PBDEs
MIEEP	2010-11	92	X	X	X	X
FOX	2010-11	101	X	X	X	X
Pilot BEST	2011-12	112	X	X	X	X
Expanded BEST	2013	341	X	X	X	X
MAMAS	2012-16	1000		X		X
ACE 1	2016	100	X	X		
ACE 2	2017	100	X	X		
FREES	2016-17	28				X
CARE-LA	2018	430	X	X	X	
CARE-2	2019	359	X	X	X	
CARE-3	2020	90	X	X	X	
EBDEP	2018-19	40 pairs				

*Number of study participants. Number of samples varies per panel.
For more information on studies or chemical panels, please visit biomonitoring.ca.gov.

Promoting Collaborations: Data Analysis Package

- Overview of study design
- Lab panels measured and number of samples per panel
- Summary of statistical work to date
- Questionnaire:
  - Topic areas
  - Questions
    - Variables
    - Frequencies of responses

Questionnaire frequency data CARE-2 (N=359)

Housing Questions	Responded	Distribution of Responses
How long have you lived in your current home?	359	Less than 1 year (24) 1-5 years (131) 6-10 years (61) Longer than 10 years (143)
When was your house or apartment built?	301	Before 1980 (126) After 1980 (175)
Is there wall-to-wall carpeting in any room of your house?	355	Yes (212) No (143)
Are any of your carpets or rugs stain-resistant or water-resistant?	235	Yes (49) No (124) No carpet (62)

Questions for the Panel

- What other information would you want included in this data package?
- How can we broaden our collaborations – and make this information more widely available?

Surveillance: Next Phase

- California Regional Exposure (CARE) Study collected valuable data, but also highlighted the difficulty in:
  - Getting a representative sample
  - Covering regions at a pace that would allow for temporal trend analysis or geographic comparisons

Promoting Collaborations: Surveillance

- Utilize archived samples from the Genetic Disease Screening Program (GDSP) as an alternative to conducting field work
- Reduces per sample cost
- Focus on understanding time trends in PFAS (and other) exposures
- Allows use of novel analytical methods to screen for broad classes of compounds

Genetic Disease Screening Program (GDSP)

- Prenatal Screening
  - Pregnant women must be informed of the State prenatal screening program at their first prenatal visit
  - Blood samples are drawn at facilities around the state, using tubes provided by GDSP, and sent to designated labs for analysis

- Newborn Screening
  - Newborn babies are tested at birth for various conditions such as cystic fibrosis, sickle cell, and metabolic disorders

What is the Biobank?

- GDSP archives prenatal samples from Fresno, Kern, Kings, Madera, Tulare, Orange, and San Diego counties
- Banked prenatal samples are split into two aliquots (approximately 0.5 mL each) for archiving
- Non-Biobank samples are typically discarded after one month, but can be requested (approximately 1.0 mL available)
- Samples from Kaiser patients and samples linked to genetic disease cases are not available

What Will Biobank Samples Help us Address?

	Opportunities	Challenges
Surveillance/fulfillment of mandate	Population-based sampling for important population	No urinary or whole blood analyses. Specific population
Temporal trends	Can look at samples from past years as well as future	
Equity	Compare levels by race, Medi-Cal status, by zip, or by distance from exposure sources	All we know about participants is from GDSP records. No exposure questionnaires
Semi-targeted and other novel analyses	Yes	

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Biobank Samples Cannot Help us Address Some Issues

- Surveillance of metals exposures
- Phenols and other urinary analytes
- Community-focused studies
- Intervention studies involving behavioral changes
- Evaluate exposures associated with climate change
- No opportunity to collect exposure information from participants

Existing and Future Projects

	Existing Projects	In Planning	Exploration
Inequities/responsive to community concerns	ACE EBDEP SAPEP	BiomSPHERE	Issue a Request for Information (RFI)
Population-wide exposures	BEST CARE MAMAS	Expanded MAMAS	Exploration into other means of surveillance
Changes in exposures over time		Expanded MAMAS	
Evaluate strategies for exposure reduction	FREES SAPEP	Expanded MAMAS (population level)	
Expand the reach and sustainability of the Program	Current collaborations Lab method development	Data package project Lab collaborations	

Discussion Topics

- Expanding collaborations
- Biobank
- Criteria for evaluating additional projects

Expanding Collaborations for Data Analysis

- What other information would you want included in this data package?
- How can we broaden our collaborations – and make this information more widely available?

Biobank Sampling Design

- Should sampling focus on Biobank counties or non-Biobank counties?

Biobank	Non-Biobank
Samples available from Fresno, Kern, Kings, Madera, Tulare, Orange, and San Diego counties	Samples available from all other counties
Can look at time trends from past to present	Can look at time trends going forward
0.5 mL samples	1.0 mL samples

- How can we change current practices to address program goals using Biobank samples?

Future Projects

- If we have capacity to take on additional projects, how can we identify potential collaborations across the state?

- Which program goals are most important to consider as we evaluate potential projects?

Program Budget Details

Funding/Source	Fiscal Year
Baseline State funding: $2.2 million	n/a - baseline
CDC Cooperative Agreement: $1.0 million	FFY 14/15 FFY 15/16 FFY 16/17 FFY 17/18 FFY 18/19
State special funds (Four-year augmentation): $700,000	FY 14/15 FFY 15/16 FFY 16/17 FY 17/18
State special funds (2-year augmentation): $1.2 million	FY 15/16 FY 16/17
Stakeholder bill (1-year augmentation): $1.0 million	FY 16/17
On-going budget augmentation: $2.0 million	FY 21-22