SAMPLING PLANS FOR MULTIVITAMINS AND DIETARY SUPPLEMENTS CONTAINING OMEGA-3 ACIDS IN THE DSID

JANET M. ROSELAND, KAREN W. ANDREWS, ANGELA MIDDLETON, CUIWEI ZHAO, MATTHEW FEINBERG, JOANNE M. HOLDEN, LARRY DOUGLASS, JOHANNA T. DWYER, MARY FRANCES PICCIANO, REGAN BAILEY, LEILA SALDANHA

Nutrient Data Laboratory, BHNRC, ARS, USDA
Office of Dietary Supplements, NIH
Biometrics Program, University of Maryland

Agricultural Research Service

DSID
Dietary Supplement Ingredient Database
A U.S. Government Initiative

USDA

DSID: What is it?

A database validated by analytical data, for key ingredients of public health importance in dietary supplements

Funded by:

Office of Dietary Supplements, NIH

U.S. Department of Agriculture

Collaborators with Nutrient Data Laboratory:

Office of Dietary Supplements, NIH

National Cancer Institute, NIH

National Center for Health Statistics, CDC

Food Composition and Methods Development Lab, BHNRC, ARS

National Institute of Standards and Technology

Food and Drug Administration

DSID Home Page

DSID First Release: DSID-1

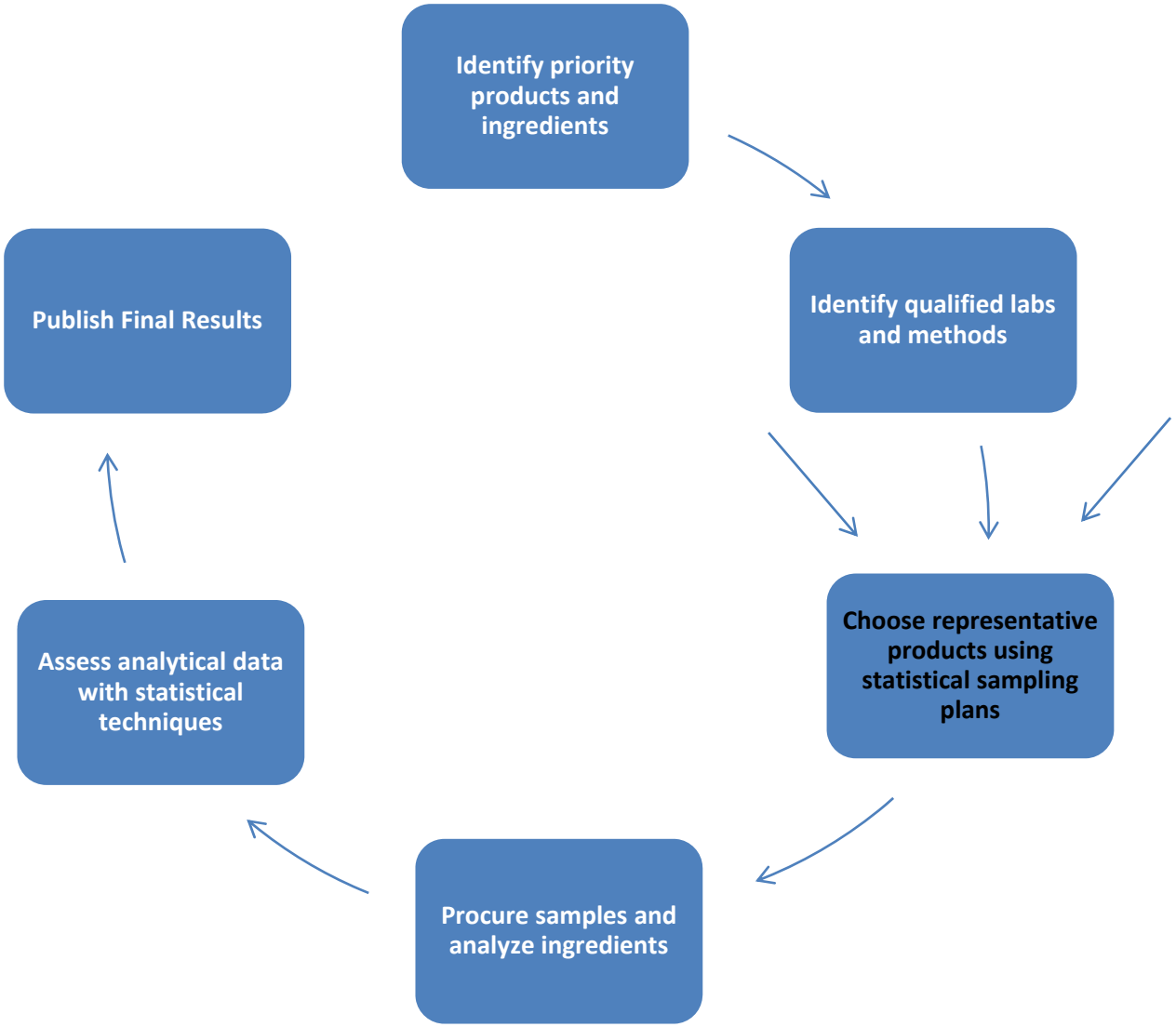
- Provides analytically-based estimates of nutrient values in adult MVMs

- Data files include:
  1) Predicted values and SEs for 18 individual nutrients at a range of labeled levels for adult MVMs
  2) Links between nutrient estimates and NHANES files

//dietarysupplementdatabase.usda.nih.gov

DSID Study Design Steps

DSID Study Design Steps



DSID Study Goals

- **Adult & Children's MVM study objectives:**

  To examine relationships between label and analytical values for *vitamins and minerals* and assess variability for specific nutrients in *MVM products.*

  To provide nationally representative estimates for vitamins and minerals in commonly reported *MVM products*.

- **Omega-3 study objectives:**

  To investigate relationships between label and analytical levels of *EPA, DHA, ALA, and total omega-3s* and assess variability in *omega 3 fish, flaxseed, and blend products.*

  To provide nationally representative estimates for omega-3 levels in commonly reported *omega-3 products*, based on labeled content or other label information.

DSID Sampling Plan Strategy

Goal:

Choose representative dietary supplement products to analyze

Approach:

- ❑ Develop study-specific plan, using market reference data
- ❑ Purchase samples from multiple channels
- ❑ Purchase retail samples from multiple U.S. areas
- ❑ Obtain multiple lots

Reference Data for Sampling Plans

Recent NHANES (data files)

Independent marketing firms (user data)

Nutrition Business Journal (sales data)

Store surveys (observations)

Multi Ethnic Cohort, TEDDY, FDA (studies/reports)

Scientific and industry experts

Internet

Multiple Channels

RETAIL SALES

Mass Merchandisers

Drug Stores

Grocery Stores

Warehouse Club Stores

Multiple Channels

RETAIL SALES

Mass Merchandisers

Drug Stores

Grocery Stores

Warehouse Club Stores

Natural Food/Health

Health Food Stores

“Nutrition” and “Vitamin” Stores

Multiple Channels

RETAIL SALES

Mass Merchandisers

Drug Stores

Grocery Stores

Warehouse Club Stores

Natural Food/Health

Health Food Stores

“Nutrition” and “Vitamin” Stores

DIRECT SALES

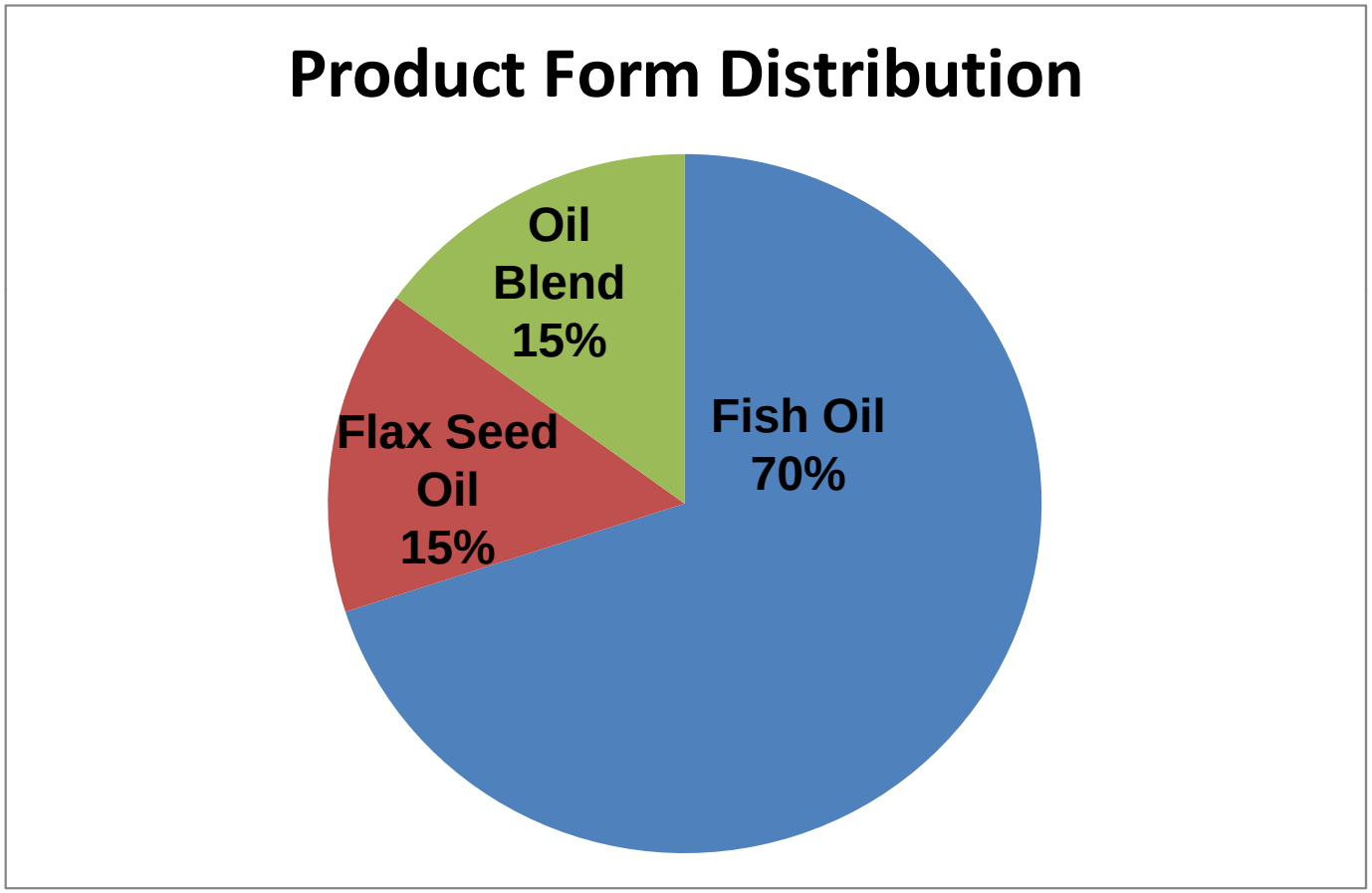
Multi-level Marketers

Internet

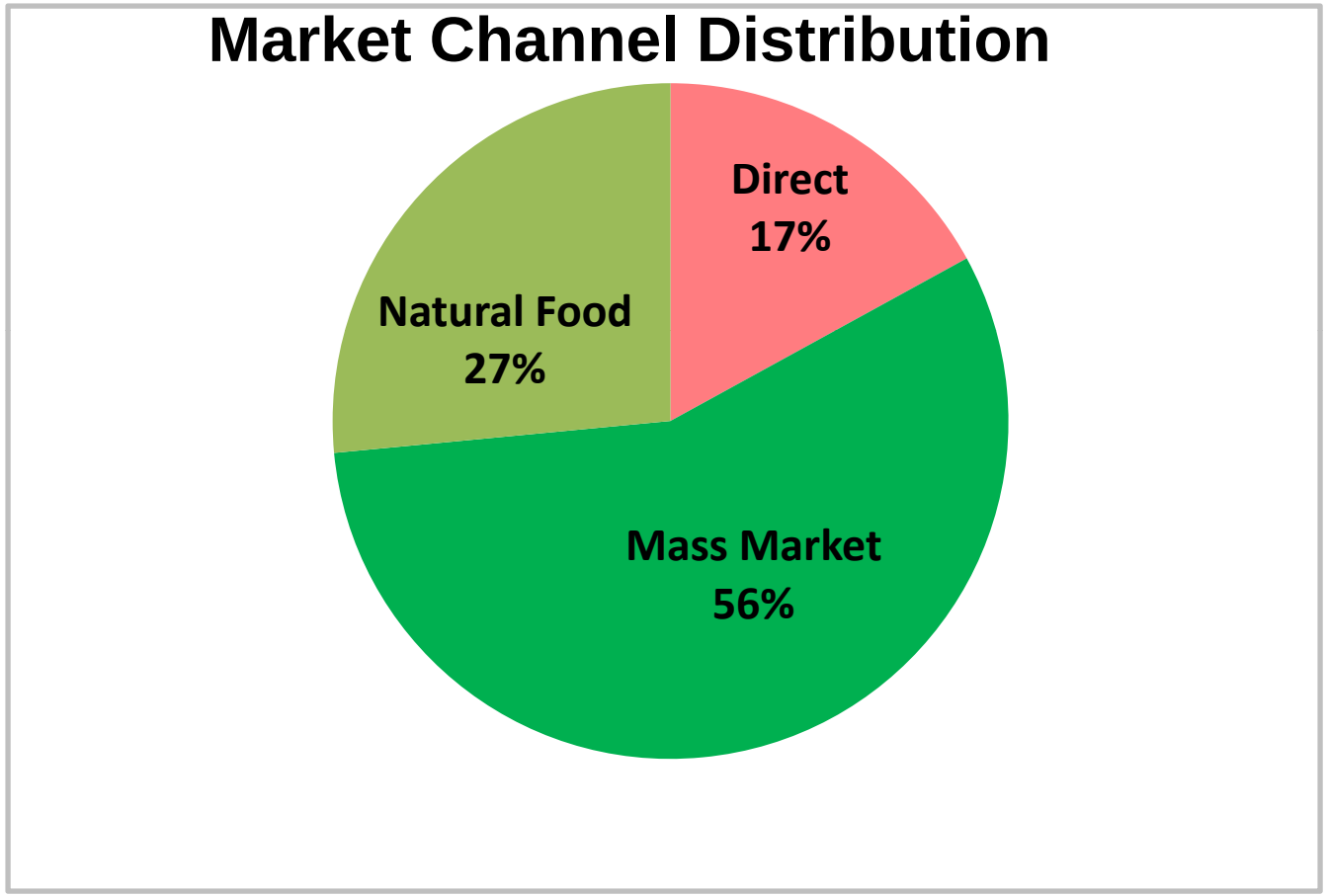
Health Practitioners

Nationwide Sampling Map

Omega-3 Products Sampling Plan



Omega-3 Products Sampling Plan



Sampling Plan:
Omega-3 Fatty Acid Supplements

TOP–

Identified commonly reported products.

N=20

Goal: 6 lots/product

LMS –

Identified brands and forms.

Retail sales: N= 50

Direct sales: N=10

Goal: 3 lots/product

Sampling Plan:
Adult and Children's MVMs

TOP–

Identified commonly reported products.

Total >50% of market share.

N=35 (adult)

N= 20 (children's)

Goal: 6 lots/product

LMS –

Identified, stratified, and randomly selected Lower Market Share products.

N=80 (adult)

N=45 (children's)

Goal: 3 lots/product

Sampling Plans:
Adult and Children's MVMs

- Identified specific products for purchase, using market share information.

- Evaluated the labeled levels of products purchased, to identify any gaps in nutrient levels.

- Used market share information to weight analytical results for each product for regression analysis, for making predictions for national estimates.

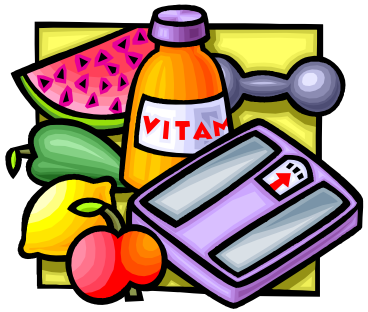
Plans for DSID 2nd Release

DSID-2

- Analytically-based estimates of children's MVM nutrient values
- Updated adult MVM nutrient data

Data files:

1) Predicted values and SEs for prioritized nutrients at a range of labeled levels for children's MVMs
2) Links between nutrient estimates and NHANES files



Summary

- Statistically-based sampling plans are necessary to identify representative products for chemical analysis for national estimates in DSID
- Sampling plan development is study-specific
- Current market-based references are essential
- Total nutrient estimates using data from dietary supplements plus food can be used for accurate assessment of total intake

Agricultural Research Service

DSID Dietary Supplement Ingredient Database A U.S. Government Initiative

USDA