



The Food Safety Research Consortium's
FSII Project: Phase 1

Exploring Opportunities to Improve the Nation's Food Safety Information Infrastructure

Michael Batz
mbatz@epi.umaryland.edu

CIFOR Meeting - Atlanta, GA
19 September 2006

University of Maryland School of Medicine
Department of Epidemiology and Preventive Medicine



Overview

- Project motivation and goals
- Describing the FSII
 - Institutions and relationships
 - Data types
- Plan of action
 - Sector-based workshops
- How can you participate?

What is the FSRC?

- Multi-disciplinary collaboration of six universities and one research institution
- Research focuses on decision tools and analytical approaches for risk-based and data-driven food safety decision making, including priority setting, resource allocation, and targeting of interventions
- Major projects:
 - Foodborne Illness Risk Ranking Model (FIRRM)
 - Conceptual Framework: Prioritizing Opportunities to Reduce Risk of Foodborne Illness
 - Food Safety Information Infrastructure

A Working Definition for “Food Safety Information Infrastructure”

- For this project, the FSII is defined as:
All of the many public and private institutions, programs and processes through which data and information are collected, made accessible, and actively shared to protect and improve food safety.

Why is the FSII Important for Improving Food Safety?

Having the right information available where it's needed is critical to:

- ◆ Understand food safety problems
 - Magnitude and distribution
 - Causes and risk factors
- ◆ Manage the food safety system
 - Day-to-day operations
 - Response to outbreaks and other problems
- ◆ Improve preventive strategies
 - Targeting interventions for risk management
 - Allocating scarce public and private resources

FSII Project: Phase 1

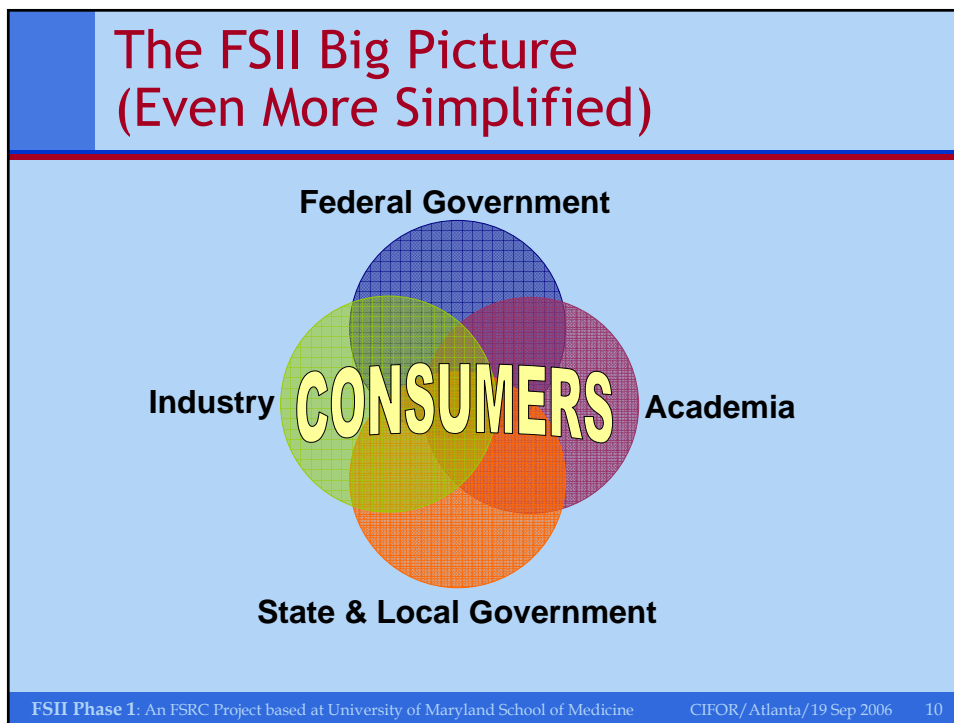
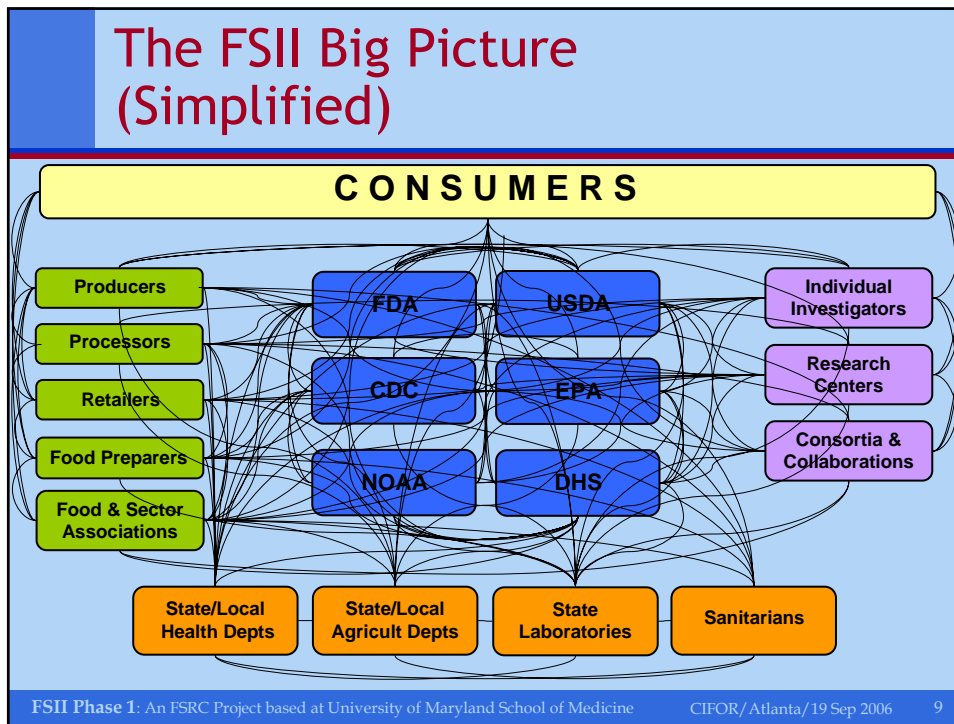
- ◆ Funded by Robert Wood Johnson
- ◆ Scoping study
- ◆ 18 month timeline
- ◆ Project team:
 - Mike Taylor
 - Jan Powell
 - Mike Batz
 - Glenn Morris

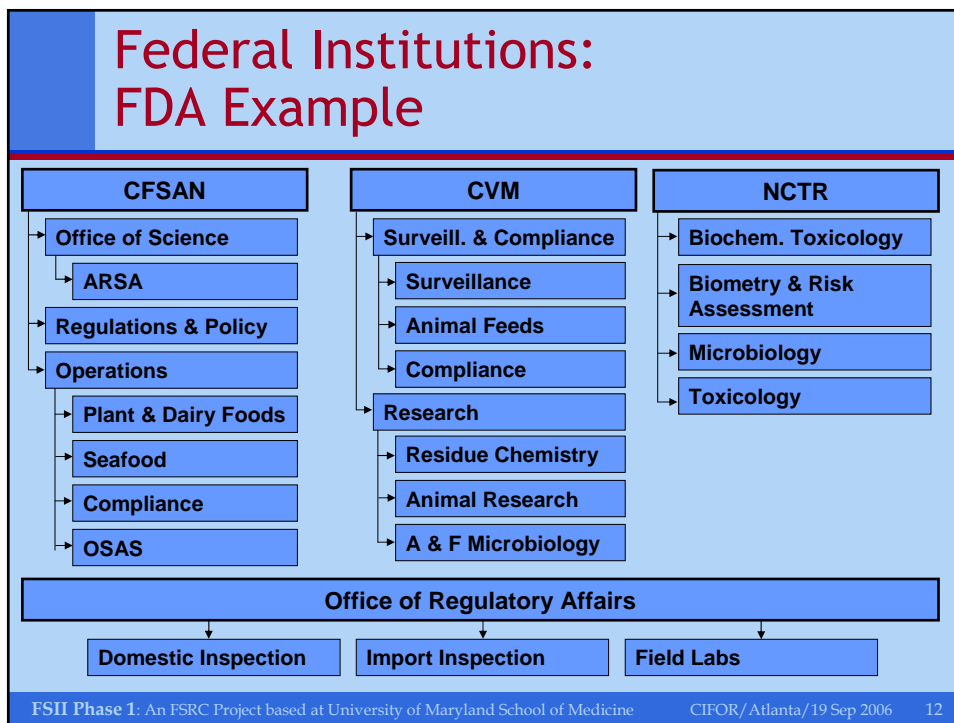
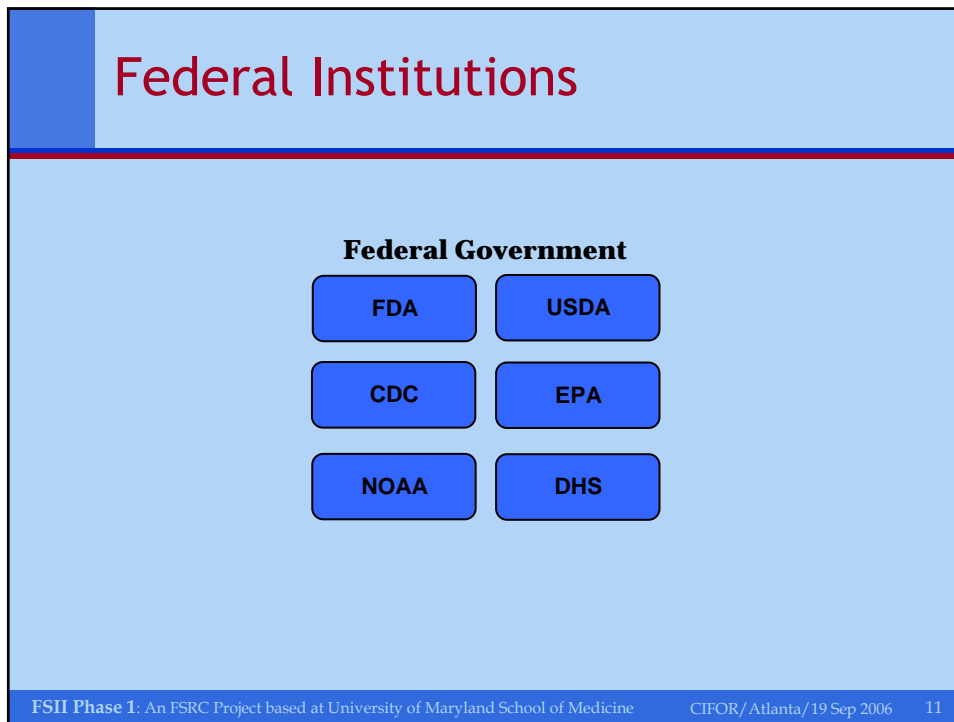
Project Goals

- Key Deliverable - Determine realistic opportunities for improving the U.S. food safety information infrastructure based on the interests and perspectives of the food safety community
- Broaden and deepen stakeholder understanding of the current FSII
- Better define key constraints on collaboration, access, and sharing

Describing the Landscape: Key Features of the FSII

- Institutional complexity
 - Multitude of institutions, public and private
- Data complexity
 - Many kinds of data collected for many distinct food safety purposes
- Efforts underway
 - Increasing efforts to “think” as a system and to share data across institutions
- Constraints
 - Numerous obstacles to data sharing and access, from legal and liability concerns to technical limitations of data and repositories to serious resource constraints





State and Local Government

- Over 3000 local agencies with food safety responsibilities
- Multiple institutions at state and local level:
 - Health Departments/Epidemiologists
 - Agriculture Departments
 - Labs (Public Health and Agriculture)
 - Sanitarians/Environmental Health Specialists
- Key differences among states and localities
 - Organization
 - Resources and priorities
 - Methodological differences

State/Local
Health Depts

State/Local
Ag Depts

State
Laboratories

Sanitarians

Local-State-Federal Roles: Interactions and Dependence

- Active interactions include -
 - Illness surveillance
 - Outbreak investigation and management
 - Food processing inspections and compliance
 - Retail standard-setting and inspection
- Feds rely on states and localities for -
 - Frontline oversight
 - Labs and data generation
- States rely on Feds for -
 - Technical and regulatory standard setting
 - Resources

Food Industry

- Producers
- Processors
- Retailers
- Food Preparers
- Food & Sector Associations

- Tremendous increase in testing and use of data by firms to manage food safety systems and supply chains
- Intervention research by firms and associations
- Extensive and diverse interaction with government at all levels
- Lots of differences in food safety activities
 - Between sectors/commodities
 - Between firms in same sector/commodity
 - Up and down the production chain

FSII Phase 1: An FSRC Project based at University of Maryland School of Medicine CIFOR/Atlanta/19 Sep 2006 15

Academia and Research

- Lots of research; uncoordinated agendas
- Tendency toward producing disparate and disconnected data
- Characteristics impede coordination of research and data collection
 - Investigator driven
 - Geographically separate
 - Often organized by discipline
 - Across institutions
 - Within institutions
- Often focused on local food industry
- No centralized repositories

Individual Investigators

Research Centers

Consortia & Collaborations

FSII Phase 1: An FSRC Project based at University of Maryland School of Medicine CIFOR/Atlanta/19 Sep 2006 16

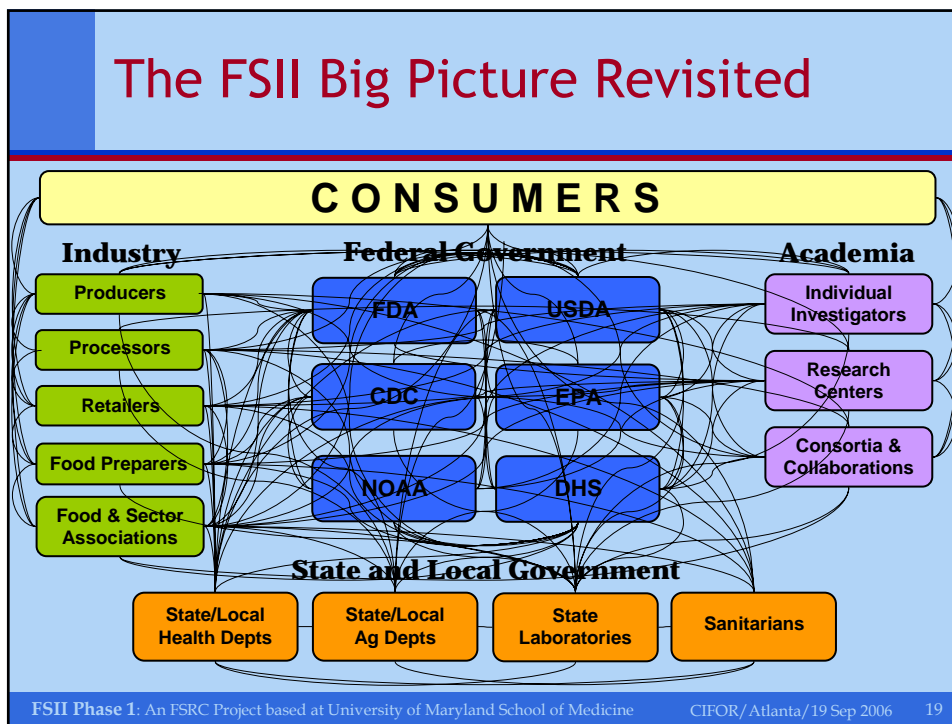
Academia Example: University of Maryland

- University of Maryland, College Park
 - College of Agriculture and Natural Resources
 - Dept of Nutrition and Food Science
 - Dept of Agriculture and Resource Economics
 - Dept of Veterinary Sciences (VA-MD Reg College of Vet Med)
 - Maryland Cooperative Extension
 - Maryland Agriculture Experiment Station
 - JIFSAN (with FDA)
- University of Maryland School of Medicine (Baltimore)
 - Dept of Epidemiology & Preventive Medicine
 - Dept of Medicine
 - Dept of Microbiology & Immunology
- University of Maryland Eastern Shore
 - School of Agriculture and Natural Sciences
 - Agriculture Experiment Station

Consumers and Consumer Organizations

CONSUMERS

- Protecting health of consumers is the ultimate point
- Consumers & their organizations are part of FSII as
 - Users of food safety information
 - Generators of information
- Food safety education key part of information landscape
- Consumers (or the public) confront the same complexity as institutions in terms of multiple sources, sometimes confusing information, and constraints on access



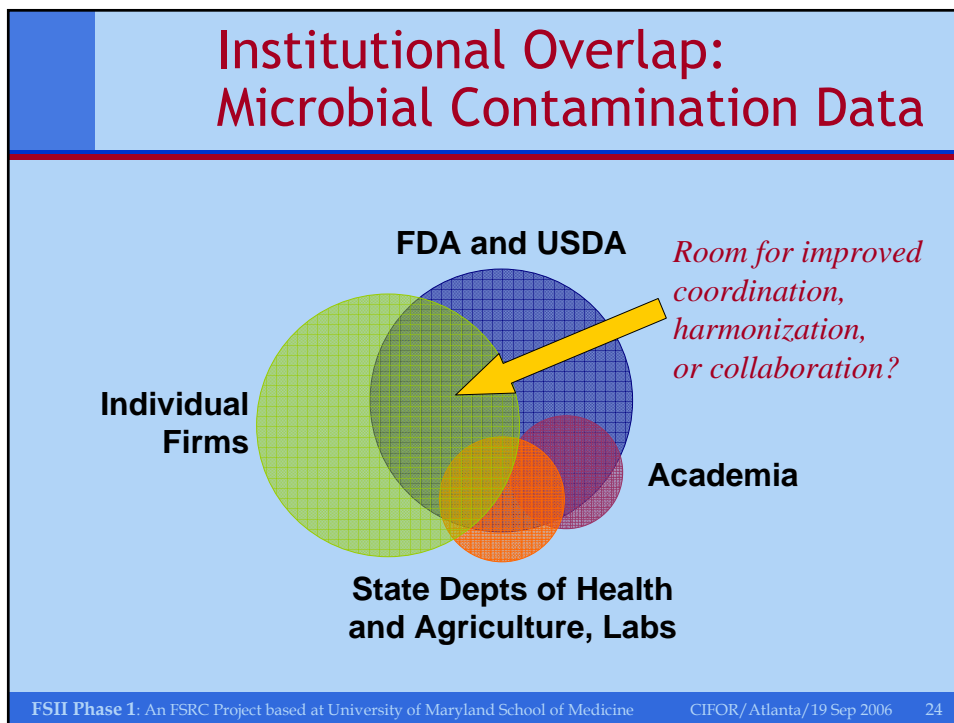
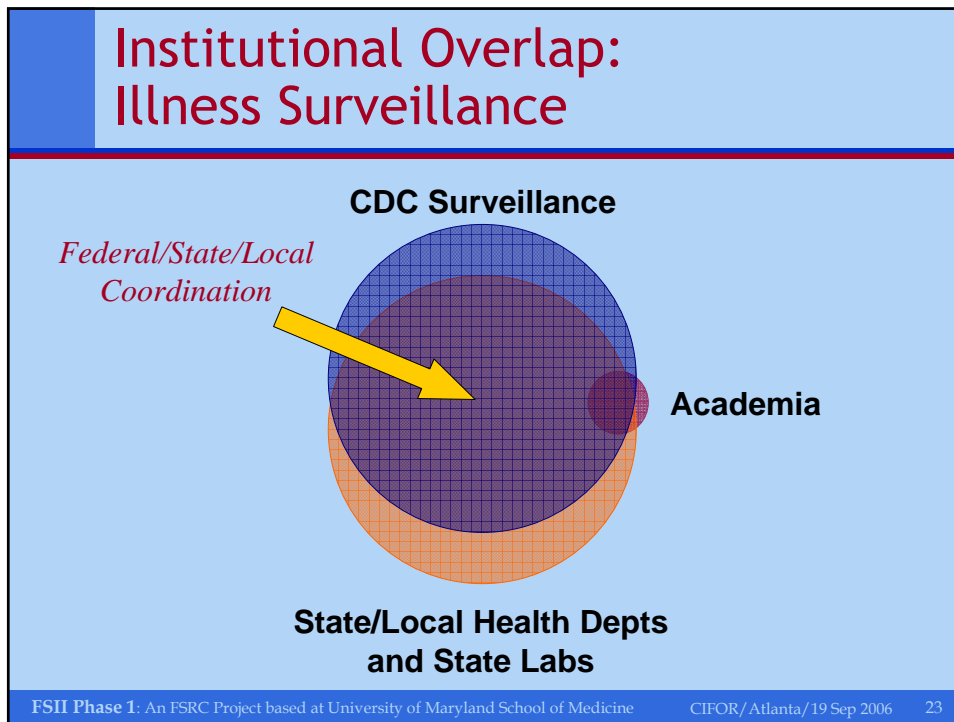
- ## The FSII by Data Type
- In addition to who is collecting data, we need to know what data are being collected
 - Create a data typology to:
 - Capture the range of food safety data that compose the system
 - Organize thinking about which data are similar
 - See which institutions are collecting which kinds of data
 - This perspective can
 - Identify gaps in data collection
 - Identify overlaps where there is room for improved coordination, harmonization, or collaboration
 - Identify areas in which repositories or other mechanisms might be most useful
- FSII Phase 1: An FSRC Project based at University of Maryland School of Medicine CIFOR/Atlanta/19 Sep 2006 20

Major Food Safety Data Types

- 1. Human Health Data**
Quantifying and characterizing human illness, including incidence, attribution, and valuation
- 2. Contamination Testing Data**
Quantifying prevalence or counts/levels of contamination, including surrogates/indicators
- 3. Other Signs of Contamination**
Quantifiable signs of contamination beyond product testing (hygiene, filth, etc)
- 4. Hazard Identification**
Detecting, identifying, & characterizing hazards

Major Food Safety Data Types (2)

- 5. Hazard Modeling**
Estimating exposure to hazards and estimating illnesses from exposure
- 6. Industry Practice Information**
Characterizing food production systems, food safety management, and interventions
- 7. Consumer Information**
Characterizing populations and the behavior, perceptions, and attitudes of consumers
- 8. Miscellaneous**
Additional important information for food safety



Data Types: Observations

- Types of data differ in terms of --
 - Which institutions are involved
 - Amount and quality of data
 - Comparability of data
- Difficult to figure out what data even exist
 - No central database of food safety data
 - Some data collection activities are private
 - High likelihood of unnecessary duplication of efforts
 - Are there benefits to keeping track of food safety research in an organized, regularly updated manner?

Positive Steps Underway

- Wide recognition of farm-to-table spectrum of causation and prevention and need for “systems” approach to food safety
- Important developments and initiatives
 - Internet and other IT tools
 - FoodNet, PulseNet, and other networks
 - Repositories and databases
- New collaborations
 - Federal - RAC, JIFSAN, NCFST
 - State level - ASTHO, APHL, NACCHO, CSTE, AFDO
 - Industry best practice initiatives
 - Academic centers, partnerships, and consortia

Constraints to sharing

- ◆ Institutional missions and priorities
 - Driving data collection and use
 - Keeping operational focus on task at hand
 - Raising policy and liability concerns about use of data by others
- ◆ Government policies and legal rules
 - FOIA and Privacy Act
 - Data Quality Act
 - Rules of the regulatory process

Constraints (continued)

- ◆ Scientific/technical limitations
 - Lack of standardization in collection methods impedes comparability of ostensibly similar data
 - Date collected for one purpose may not be useful for others due to methodological differences
 - Lack of tools and agreed approaches for integrating diverse data from diverse sources reduces incentive for sharing
- ◆ Resources, Resources, Resources
 - Public sector - agencies struggle to perform tasks at hand
 - Private sector - scarce resources focused on core system management job

Achieving Project Goals: Plan of Action

- Document and analyze current FSII
 - Landscape paper and information resource
- Enlist the food safety community
 - Create and engage Project Advisory Group
 - Stakeholder survey for broad perspective (*tentative*)
- Foster focused dialogue across sectors
 - By coordinating a series of workshops
- Distill the community's perspectives
 - Concluding conference
 - Final report

Four Workshops

- Format
 - Small (30-35 invited participants), to encourage discussion
 - Planned and facilitated with stakeholder leaders
- Topics and Dates
 - Role of the Public Sector
November 2-3, 2006 (Atlanta, GA)
 - Role of the Private Sector
December 13, 2006 (Washington, DC)
 - Role of the Research Community
Jan/Feb 2007 *tentative*
 - Mechanisms for Data Sharing
Feb/Mar 2007 *tentative*

Workshop 1: Public Sector

- “Data Collection, Access, and Sharing by Local, State, and Federal Governments”
 - Nov 2-3, 2006
 - Atlanta, GA: Holiday Inn Decatur
- Illustrative questions:
 - Are current federal data collection activities meeting stakeholder needs?
 - How well do federal data collection activities support state and local activities, and vice versa?
 - Are public data adequately accessible?
 - What are the obstacles to data sharing by federal agencies? By state and local agencies?
 - Is improved coordination of data collection a desirable objective? Is it a reasonable objective?

Workshop 2: Industry

- “Private Sector Collection and Sharing of Food Safety Data”
 - Dec 13 2006
 - Washington, DC
- Illustrative questions:
 - What data are currently collected by the food industry?
 - What is the potential utility of industry-generated data for other stakeholders?
 - How are these data limited by the manner of their collection?
 - What are the constraints on industry sharing of data?
 - Under what conditions, and for what purposes, might industry sharing of data be possible?

Workshop 3: Academia

- “The Role of the Research Community”
 - Jan/Feb 2007 (tentative)
- Illustrative questions:
 - What are the strengths, weaknesses, and gaps in data generated by the research community?
 - Is improved coordination of research agendas an achievable objective? A desirable one?
 - Are research community data adequately accessible?
 - What are the key constraints to improving access to research community data?

Workshop 4: Mechanisms

- “Mechanisms for Data Access and Sharing”
 - Feb/Mar 2007 (tentative)
- Illustrative questions:
 - How are institutional technologies (networks, databases, and repositories) currently used to foster data access and sharing?
 - What is their potential utility for food safety?
 - What are the key factors (legal, policy, technical, cost, etc.) limiting their utility?
 - What other facilities beyond IT (e.g. cooperative agreements, third-party involvement) can improve data sharing and accessibility?

Public Data Workshop: Draft Agenda

1. Public health illness surveillance: how can it better meet stakeholder needs?
2. Frontline management: meeting the data needs of state and local government
3. Regulatory data collection: can it have utility for other purposes?
4. System-wide management: meeting data needs for a systems approach to food safety
5. Standardization and harmonization in data collection and reporting

Workshop 1, Session 1: Public Health Illness Surveillance

- Led by Rob Tauxe and CDC colleagues
- Use FoodNet & OutbreakNet/EFORS as examples
- Some driving questions:
 - Are stakeholder needs from national surveillance systems being met?
 - How might these systems refine or expand data collected?
 - How might timeliness & depth of access be improved?
 - Are public-use data sets desirable? Are they worth the investment?
 - What are the key constraints to data collection? To sharing and access?

Workshop 1, Session 2: State and Local Data Needs

- Led by Dale Morse, Joe Corby, and ?????
- Elicit differences of opinions in:
 - EIP sites and non-EIP sites
 - Epi and Ag perspectives
- Driving questions:
 - What are the key unmet data needs at the state & local level?
 - Whose responsibility is it for meeting those needs?
 - How can the quantity, quality, & timeliness of data be improved?
 - Are there needs/opportunities to improve sharing between agencies at the state and local levels?
 - What are the particular obstacles in multi-jurisdictional outbreak situations? How can they be overcome?

FSII Phase 1: An FSRC Project based at University of Maryland School of Medicine

CIFOR/Atlanta/19 Sep 2006 37

Thanks!

For more information:

<http://www.rff.org/fsrc/fsii/>

Mike Taylor

mtaylor@epi.umaryland.edu

Mike Batz

mbatz@epi.umaryland.edu

Jan Powell

jpowell@epi.umaryland.edu

FSII Phase 1: An FSRC Project based at University of Maryland School of Medicine

CIFOR/Atlanta/19 Sep 2006 38