

Vision for the Future: A Real Time Disease Detection Program with the Oregon Poison Center

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Oregon Poison Center

- Serves as an emergency information and resource center for the public and health care professionals
- 24 hours a day
- Includes residents of Oregon, Alaska and Guam.
- Handles almost 70,000 calls a year related to poisonings, toxic exposures, and information requests

Why Collaborate?

- 2008 (CDC Public Health Emergency Preparedness Grant Requirement)
 - *“to establish a sustainable, ‘real-time’ surveillance system for early detection and investigation of chemical, biological, radiological and nuclear exposures.”*
- Good public health surveillance!
 - Population-based
 - Multitude of calls on poisonings, toxic exposures, and information requests
 - ‘real-time’
- Relevant Public Health Division-wide

Cross-Program Collaboration

- Workgroup
 - Injury Prevention Program
 - Environmental Public Health Tracking (Algal Toxin)
 - Oregon Worker Illness and Injury Prevention Program (OWIIPP)
 - Pesticide Exposure Safety & Tracking
 - Environmental Health
 - Industrial Hygiene
 - Acute and Communicable Disease

Getting the Data

- Toxicall®
 - data software program used by poison centers countrywide to keep track of phone calls
- ToxiTrack
 - used to send case report information from Toxicall® to State health departments
 - does not contain case notes or case identifiers
- National Poison Data System (NPDS)
 - Web application that aggregates data from all regional poison centers and allows query of data

Type of Data

- **Exposures and Information Calls** (drug, environmental, occupation, poison, etc.)
- **Reasons for exposures** (environmental, food poisoning, occupational, adverse reaction)
- **Route of exposure** (ingestion, inhalation)
- **Place of exposure** (workplace, home)
- **Clinical effects**
- **Generic and Specific Substances**

Other Data

- Caller zip
- Patient Age
- Patient Sex
- Medical Outcome (e.g., death, major, minimal effect)
- Referred or transported to HCF

Using the Data: Toxikosurveillance

- Surveillance for:
 - Increase in total call volume
 - Increase in one or more clinical effects
 - Specific case definitions (e.g., algal toxin, chemicals, foodborne, fish poisoning exposures, etc.)

Reports vs. Email Alerts
Summary vs. Individual cases

NPDS (Summary Report)

OR-Oregon Poison Center (Portland)

Call Type By Month

Date: 4/1/2009-4/30/2009
 Center: 016-OR-Oregon Poison Center (Portland)
 Call Type: All
 Outcome: All
 Primary Center Code: Null
 Species: All
 State: All
 Status: Closed

	Exposures			Confirmed Nonexposures			Information/Other Calls			Not Coded		
	No	Ave/Day	Row %	No	Ave/Day	Row %	No	Ave/Day	Row %	No	Ave/Day	Row %
2009												
April	4,258	141.93	81.96	7	0.23	0.13	930	31.00	17.90	0	0.00	0.00
Subtotal	4,258	141.93	81.96	7	0.23	0.13	930	31.00	17.90	0	0.00	0.00
Total	4,258	141.93	81.96	7	0.23	0.13	930	31.00	17.90	0	0.00	0.00

ToxiTrack (Summary Report)

Specific Algal Toxins

	Substance	2007	2008	2009
	Blue-green algae-		1	
	Blue-green algae-Anatoxin-a or a(s)	1	3	
	Ciguatera-Ciguatera	1		
	Ciguatera-Lutjanus aya	1		
	Ciguatera-Mycteroperca bonaci		1	
	Other-Diarrhetic Shellfish Poisoning		2	
	Other-Palytoxin	1	1	
	Other-Yessotoxin		2	
	Paralytic shellfish-Brevetoxin	1		
	Paralytic shellfish-Saxitoxin	4	9	1
	Tetrodotoxin-Goby Fish		1	
▶	Tetrodotoxin-Newts	1	3	1
	Tetrodotoxin-Salamanders	2	1	1
	Tetrodotoxin-Taricha granulosa		2	
	Tetrodotoxin-Tetraodontiformes		2	

NPDS (Individual Alert)

Welcome: Julie Plagenhoef

Reports

Toxicosurveillance

Anomaly Monitor

Anomaly Monitor - Search

Definition Type :	--Select-- Total Call Volume Human Exposure Call Volume Clinical Effect Case Based	Definition ID :	<input type="text"/>	Anomaly ID :	<input type="text"/>
		Analysis Status :	<input type="checkbox"/> Complete <input checked="" type="checkbox"/> Incomplete		
Start Date Time :	3/20/2009 <input type="button" value="v"/> <input type="text" value="00"/> <input <="" td="" type="button" value="Hrs."/> <td>End Date Time :</td> <td> 3/25/2009 <input type="button" value="v"/> <input type="text" value="00"/> <input <="" td="" type="button" value="Hrs."/> <td colspan="2"></td> </td>	End Date Time :	3/25/2009 <input type="button" value="v"/> <input type="text" value="00"/> <input <="" td="" type="button" value="Hrs."/> <td colspan="2"></td>		
<input type="button" value="Search"/>					

Case Based Anomalies

	<u>Anomaly ID</u>	<u>Def ID</u>	<u>Description</u>	<u>Owner</u>	<u>Case Start Date/Time</u>	<u>Anomaly Occurrence Date/Time</u>	<u>Region</u>	<u>State</u>	<u>Zip Code</u>	<u>Area Code</u>	<u>National</u>	<u>Analysis Complete</u>
<u>1</u>	119705	750	TEST_FoodCaseDef	OR-Oregon Poison Center (Portland)	3/21/2009 2:19:09 AM	3/21/2009 6:05:33 AM	OR-Oregon P <input type="button" value="v"/>	Oregon <input type="button" value="v"/>	<input type="text"/>	<input type="text"/>	No	No

NPDS (Individual Alert Email)

From: <Anomaly_Detected@NPDS.US>

5/4/2009 12:28

To: BANCROFT, June E; BARBER, Michelle; PLAGENHOEF, Julie A

Subject: CB Alert 123560: TEST_FoodCaseDef

CB ANOMALY

Regional Center/s = OR-Oregon Poison Center (Portland)

State/s = Oregon

Single Alert = Yes

Anomaly ID = 123560

Detected = 5/4/2009 3:18:41 PM

[Click here to analyze](#)

DEFINITION OVERVIEW

Definition ID = 750

CASE BASED DEFINITION

(<CE|Abdominal Pain|323> OR <CE|Diarrhea|327> OR <CE|Nausea|334> OR <CE|Vomiting|338>) AND <CT|Exposure|0> AND <ET|Ingestion|70> AND <PS|Human|1> AND <CS|Closed|2> AND <ER|Food poisoning|7> AND NOT (<MO|Confirmed nonexposure|9> OR <MO|No effect|0> OR <MO|Unrelated effect, the exposure was probably not responsible for the effect(s)|8>) AND NOT <PC|Aapcc Temporary Code #25|6540698>

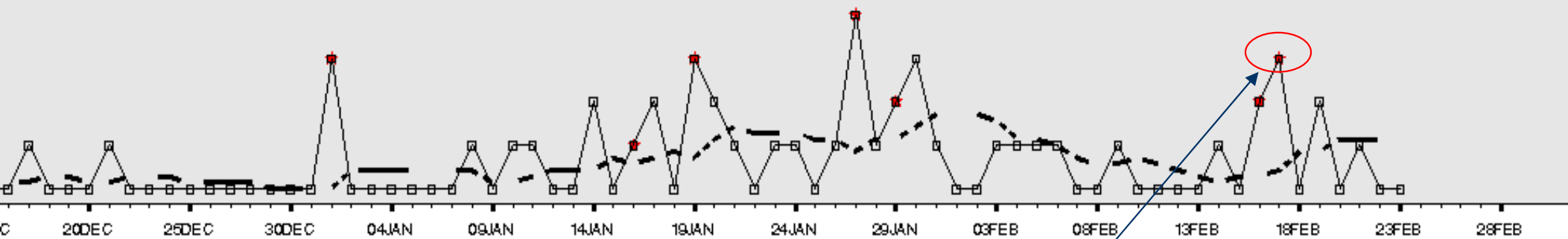
DEFINITION MESSAGE

Foodborne illness in NPDS

Please do not reply to this automatically generated NPDS email

ToxiTrack/NPDS EARS Report

Ending Date 2/23/09



EARS "Alert"

Toxicosurveillance in Oregon

- Oregon focus- Case Definitions
 - Foodborne Illness
 - Chemicals of interest (acetone, ammonia, lithium, etc.)
 - Algal toxin exposures (anatoxin, ciguatera, tetrodotoxin, etc.)
 - CO poisoning (especially in the workplace)
 - Lead poisoning
 - Opioid poisoning
 - Animal exposures to toxic substances
 - More?

Developing definitions

- What are we interested in?
- Does OPC capture what we need?
- Should we use NPDS or ToxiTrack?
 - Summary data vs. Individual cases
- What are the results of our validation?
 - Do we need to improve the definition?

Case Definition Example (NPDS)

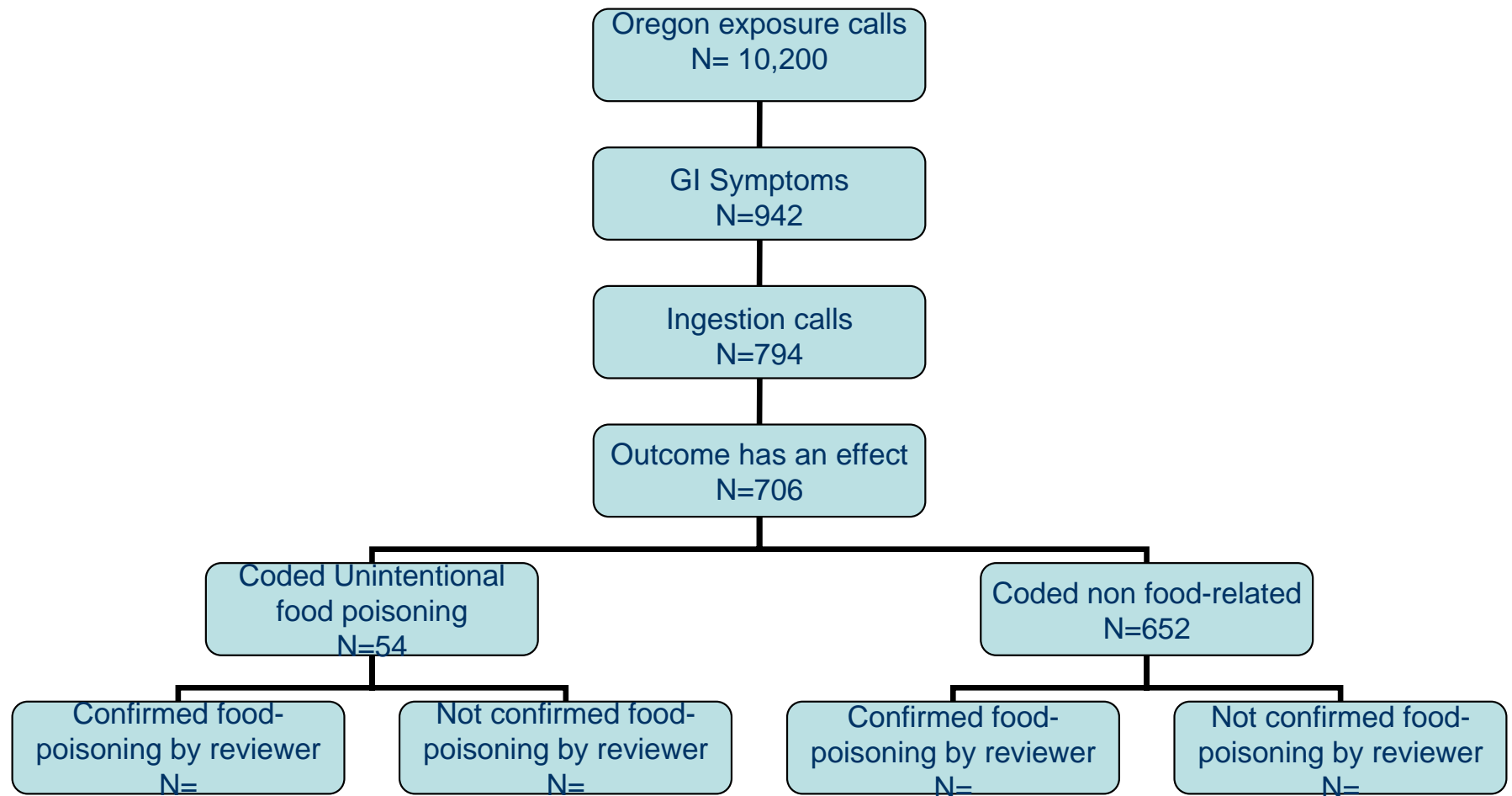
- Foodborne Illness

(<CE|Abdominal Pain|323> OR <CE|Diarrhea|327>
OR <CE|Nausea|334> OR <CE|Vomiting|338>)
AND <CT|Exposure|0> AND <ET|Ingestion|70> AND
<PS|Human|1> AND <CS|Closed|2> AND <ER|Food
poisoning|7> AND NOT (<MO|Confirmed
nonexposure|9> OR <MO|No effect|0> OR
<MO|Unrelated effect, the exposure was probably
not responsible for the effect(s)|8>) AND NOT
<PC|Aapcc Temporary Code #25|6540698>

Or in other words...

- A case that is
 - A human exposed via ingestion (of something)
 - And a closed case
 - Where reason is listed as “Foodborne Illness”
 - And outcome is NOT a confirmed non-exposure, no effect, or unrelated effect
 - And the person reported abdominal pain, nausea, vomiting, or diarrhea

Validation of Foodborne Illness Definition



Using the data: special cases

- Peanut Butter Outbreak
 - AAPCC recommended coding
 - Created case definition in NPDS
 - Compared OPC cases with reported
 - 33 cases reporting exposure
 - 20 with symptoms consistent with Salmonella infection
 - None matched reported cases
 - No increase in OPC numbers prior to media release

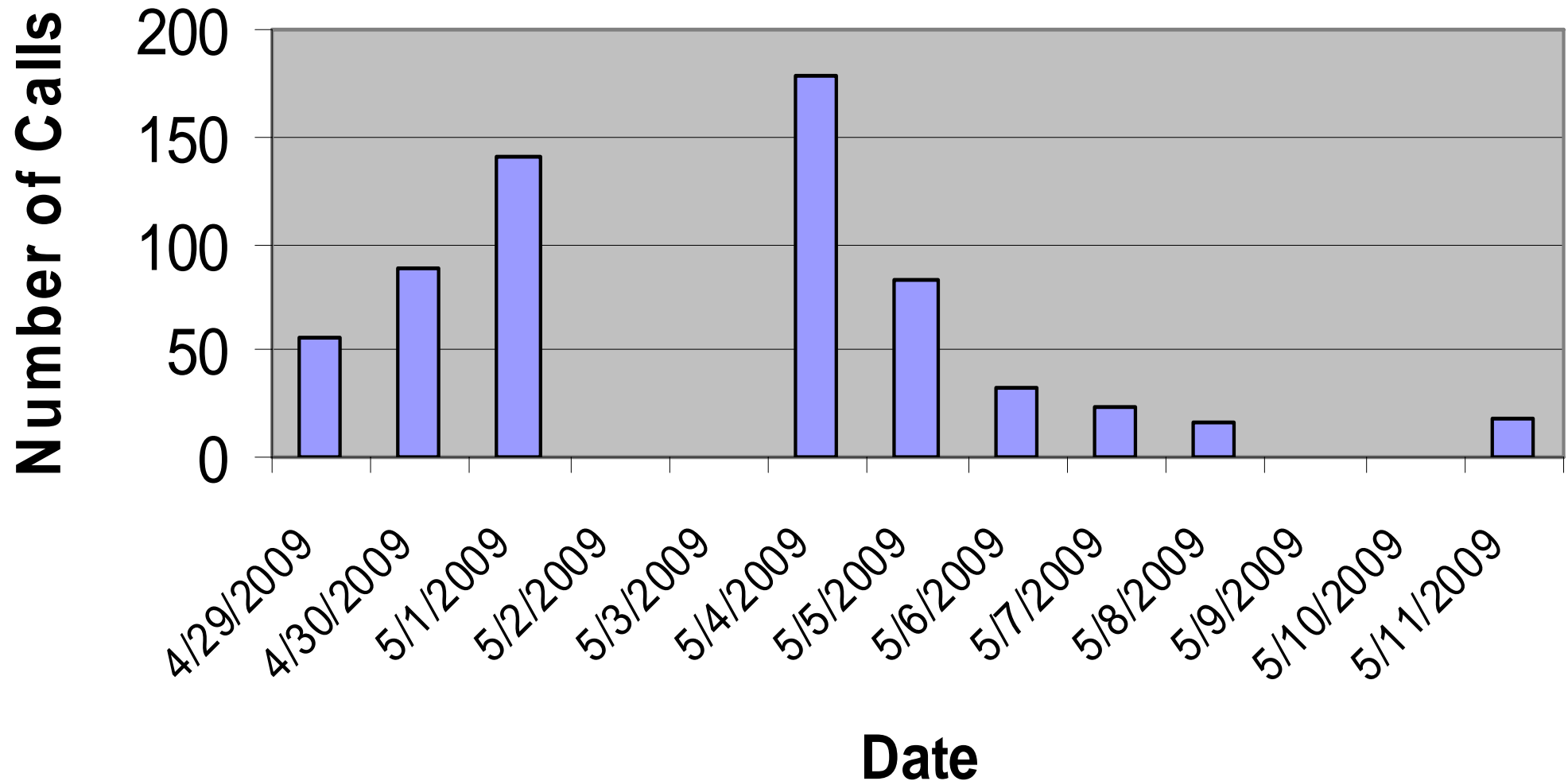
Using the Data: Emergency Preparedness

- ‘Real-time’ surveillance?
- Disaster (mid/post) surveillance
 - Adverse events reporting
- Surge capacity
 - Hotline (H1N1 Swine Influenza)
 - Nursing/physician expertise
 - Experts at the “hotline” system
 - Experts at managing information

Using the Data: Emergency Preparedness

- Hotline established within a day and a half
 - Executed MOU, retro-active, within 5 days
- OPC
 - responds to calls with script from DHS
 - provides Spanish translation
 - provides data reporting via pdf 2x daily
- Capacity and services will change based on need
- Public Health Division provides payment
- Addendum to existing contract

Number of Calls to the DHS Hotline at the OPC, April 29 - May 12, 2009



Future

- MOU/ Data Use Agreement (beyond contract)
- More case definitions (injury, ACDP, environmental hlth, tox)
- Validation of other case definitions
- Cross-check with other surveillance methods
- Follow-up procedures (finalize)
- Retrospective study

Challenges

- Limited funding
- Functional differences
 - Location
 - Public health vs. patient care
- Electronic data transfer issues
- “What’s that mean again?” syndrome

For Discussion

- What is the relationship between public health and poison centers in other states?
- What are your experiences with
 - Case reporting (e.g., pesticides)
 - Anomaly reporting
 - Collaboration during emergency situations
- What were the challenges and how did you overcome them?

Questions?

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