

# Identifying NRs with Greatest Public Health Significance

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**Subcommittee #1: Recommended that “*FSIS undertake a comprehensive review of its NR reporting system... as a result of the review consider only those NRs that relate to food safety and public health in an assessment of effectiveness of an establishment’s risk control measures.*”**

# Objective

**Assess support of the hypothesis that some types of NRs are more indicative, or predictive, of process control problems than other types of NRs**

# Approach

**Test for associations between types of NRs and the presence or absence of “adverse events” in inspected establishments (are adverse events preceded by certain types of NRs?)**

# Adverse Events

**“Adverse Events” indicate process control loss**

**Data period December 10, 2005 – June 10, 2006**

- **Laboratory events = 77**
- **Recalls = 17**
- **NOIEs = 105**

**Number of Establishments Involved = 178**

# Adverse Events (Example)

RandomNumber	LabFail	Recalls	NOIEs
1212920			1
1877917	1		
2185481		1	
3849887			1
5164638	1		
6783214			1
7338782			1
7914937			1
8479541			1
8698626			1
8873779			1
9648027			1
9971816	1		1
10014033	1		
13597560	1		
14022579		1	
14097452			1
14159511			1
14200683			1
14289164	1		
15396198	1		1

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# NR Types

**“Reg cites”**: captured electronically in PBIS

**“key words”**: requires text search analysis

# PBIS Search Engine

NR Search - Microsoft Internet Explorer provided by FSIS

File Edit View Favorites Tools Help

Address <http://dchqintra/pbisread/nrParse.asp> Go Links

**Search Term(s)**  
[Input Field]

**Logical Combination**  
 AND  OR

**Regs: Include only NRs which cite:**  
[Input Field] [Search Icon] [Help Icon]

**Report Type**  
 Text Details  
 Text Summary  
 RegCite Details  
 RegCite Summary

**Establishment Type**  
 Federal  
 State  
 Federal & State

**Active Indicators**  
 All Establishments  
 Active Establishments

**Dates (mm-dd-yyyy)**  
From: [Input Field] [Calendar Icon]  
To: [Input Field] [Calendar Icon]

**Report Destination**  
 Screen  
 File

**Procedures**

- 01A01 - Determ Est has met reg req'ments for devlpmnt or maintenance of sanitation SOP
- 01B01 - Review EST SSOP recds ensur mon effect pre-op; corr actn init'd to prev dir contrn
- 01B02 - Rev SSOP inclu recds/proced; obs sanit cond; ck 1/more area ensur Est cond clean
- 01C01 - Review Est SSOP recds ensur mon effect op; corr action init'd to prev dir contrn
- 01C02 - Rev SSOP inclu recds/proced; obs sanit cond; ck 1/more area ensur Est cond clean
- 03A01 - Deter Est met reg req'ments for devlpmnt and implementation of HACCP Plan(s)
- 03B01 - Rev HACCP inclu recds; obs conditions include use of devices; results recorded
- 03B02 - Ver HACCP rcds ensur effective monit CCP's, limis; corr act for one proc
- 03C01 - Rev HACCP inclu recds; obs conditions include use of devices; results recorded
- 03C02 - Verify HACCP rcds ensur effective monit CCP's, limis, corr act for one proc
- 03D01 - Rev HACCP inclu rcds; obs conditions include use of devices; results recorded
- 03D02 - Ver HACCP rcds ensur effective monit CCP's, limis, corr act for one proc
- 03E01 - Rev HACCP inclu recds; obs conditions include use of devices; results recorded
- 03E02 - Ver HACCP rcds ensur effective monit CCP's, limis, corr act for one proc
- 03F01 - Rev HACCP inclu recds; obs conditions include use of devices; results recorded

Select All

Select Activity

# Selected: 0

Click for Report

Local intranet

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# Reg Cites (continued)

## December 2005 PBIS Enhancement: Reg Cite “drop-downs”

**Select Regs**

Reg Cite	Description
<input type="checkbox"/> 416.4(d)	documentation Product processing, handling, storage, loading, unloading, and during transportation must be protected
<input type="checkbox"/> 416.5(a)	Cleanliness - All persons must adhere to hygienic practices
<input type="checkbox"/> 416.5(b)	Employee outside clothing must be disposable or readily cleaned
<input type="checkbox"/> 416.5(c)	Employees who appears to have any abnormal source of microbial contamination
<input type="checkbox"/> 417.2(a)(1)	hazard analysis
<input type="checkbox"/> 417.2(a)(2)	flow chart
<input type="checkbox"/> 417.2(b)	HACCP Plan
<input type="checkbox"/> 417.2(c)	Contents of HACCP Plan

Buttons: Select Regs like..., Select/Unselect All, OK

# Selected: 0

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# Analysis Set

Random	haccpsize	Type	AdverseEvent	NetWtRate	SaniCARate	CCPCARate
352	L	Meat & Poul Proc	1	0.0000	0.4084	0.0000
381	S	Meat & Poul Proc	0	0.0000	0.0000	0.0000
463	V	Poul Proc	0	0.0000	0.0000	0.0000
502	V	Meat & Poul Proc	1	0.0000	0.0000	0.0000
510	V	Poul Proc	0	0.0000	0.0000	0.0000
520	V	Meat & Poul Proc	1	0.0000	0.0000	0.0000
524	V	Meat Proc	0	0.0000	0.0000	0.0000
571	S	Poul Proc	1	0.0000	0.0987	0.0000
648	V	Meat & Poul Proc	1	0.0000	0.3788	0.3788
745	V	Meat Proc	1	0.0000	0.2110	0.0000
762	V	Meat & Poul Proc	0	0.0000	0.2762	0.0000
770	S	Meat & Poul Proc	0	0.0000	0.0000	0.0000
783	V	Meat Proc	0	0.0000	0.0000	0.0000
796	S	Meat & Poul Proc	1	0.0000	0.2155	0.0000

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# Mean Reg Cite Results

	AdverseEvent	N	Mean	Std. Deviation	Std. Error Mean
NetWtRate	1	178	.004232251	.0251425371	.0018845128
	0	5106	.003259490	.0325141010	.0004550209
SaniCARate	1	178	.085036218	.2007383315	.0150459741
	0	5106	.031345078	.1523094270	.0021315051
CCPCARate	1	178	.020352579	.0662223480	.0049635748
	0	5106	.004545539	.0427550788	.0005983390

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# Hypothesis Test Results

## t-test for Equality of Means

	F	Sig.	t
NetWtRate	0.5276522	0.467627774	0.39504695
SaniCARate	32.311156	0.000000014	4.567167368
CCPCARate	69.187534	0.000000000	4.738961259

# Ongoing Activities

- **Test other regulation cites**
- **Consider/Revise “Adverse Events”**
- **Analyze by plant type and/or event type**
- **Analyze “look back times”**
- **Consider *combinations* of regulation cites**