

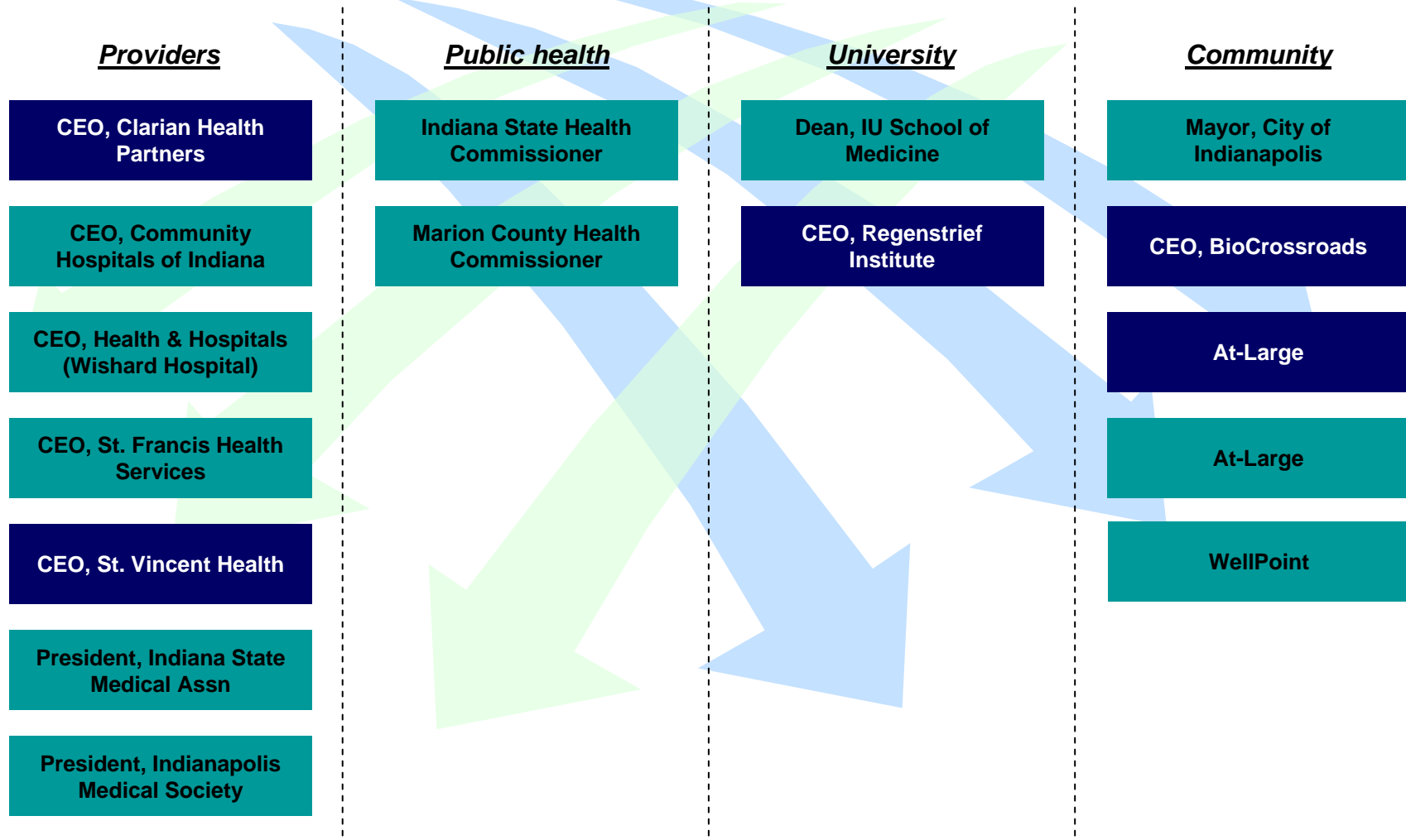


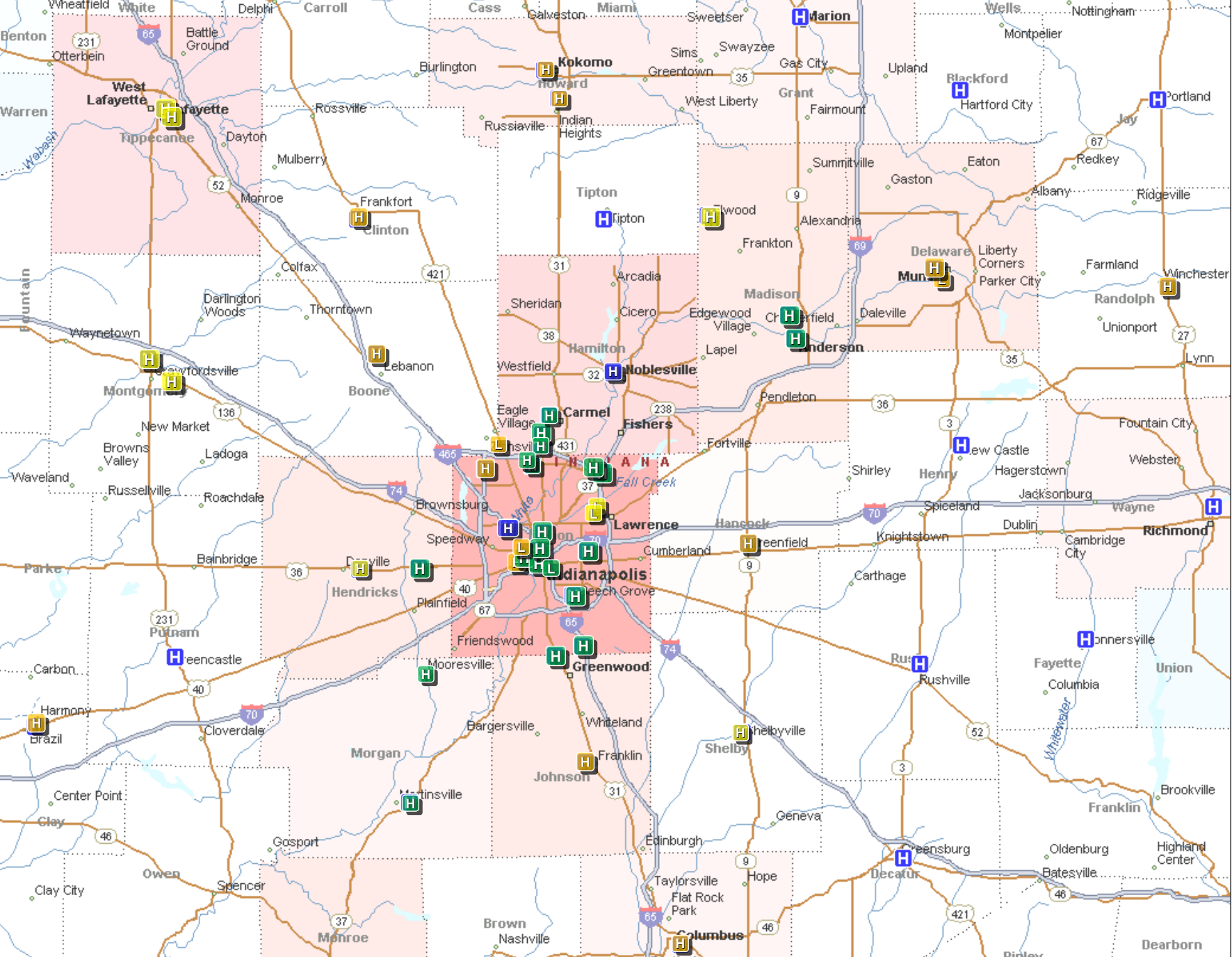
Health Information Exchange: Experience from Indiana

J. Marc Overhage, MD, PhD

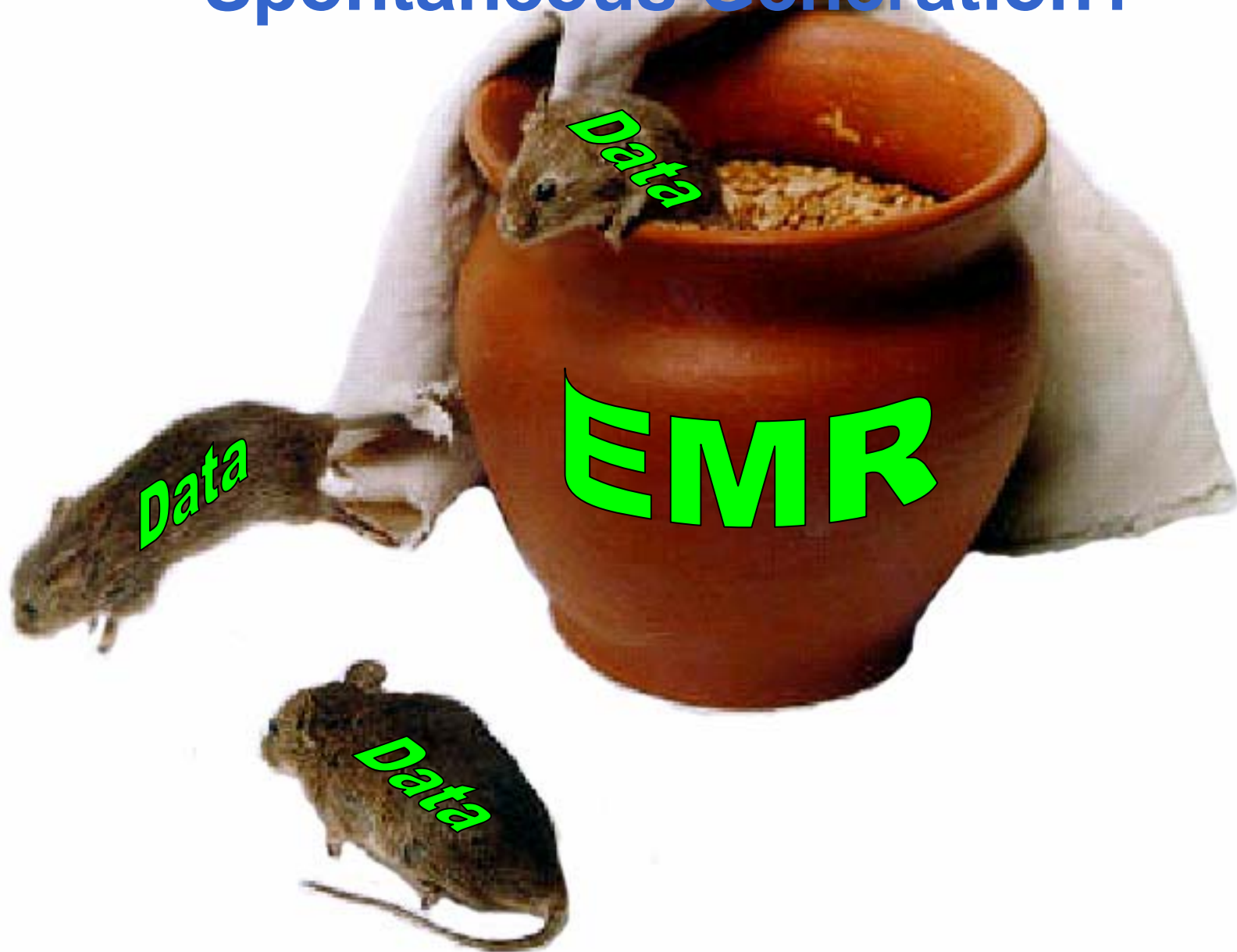


IHIE Board Composition





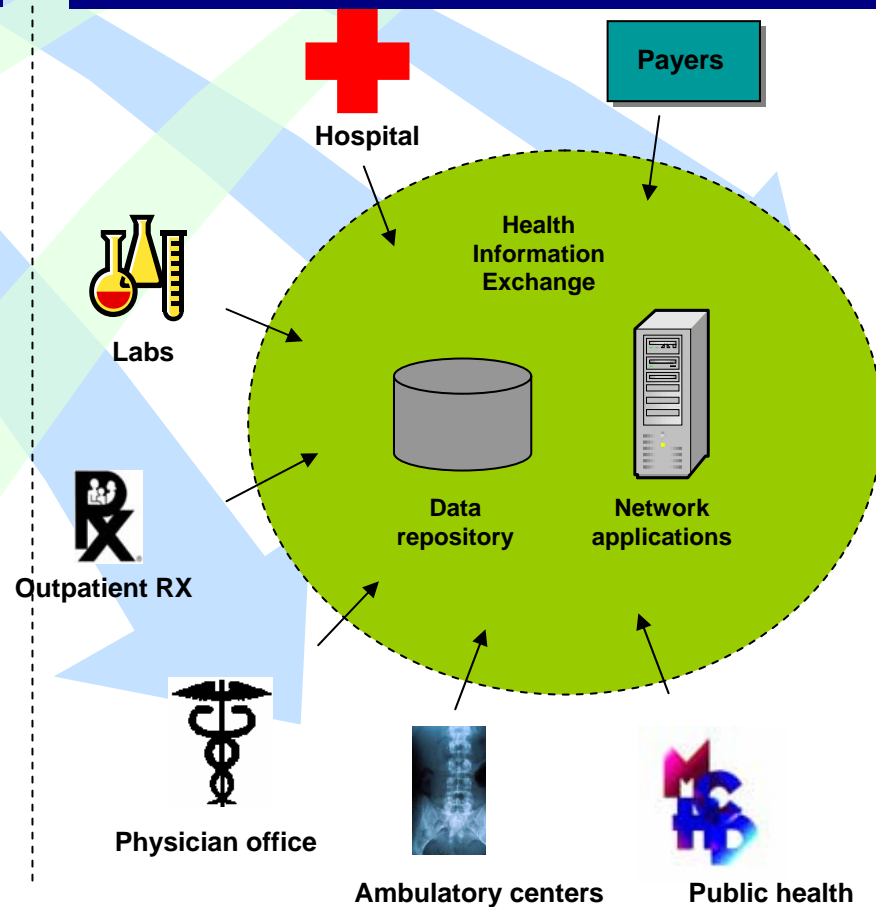
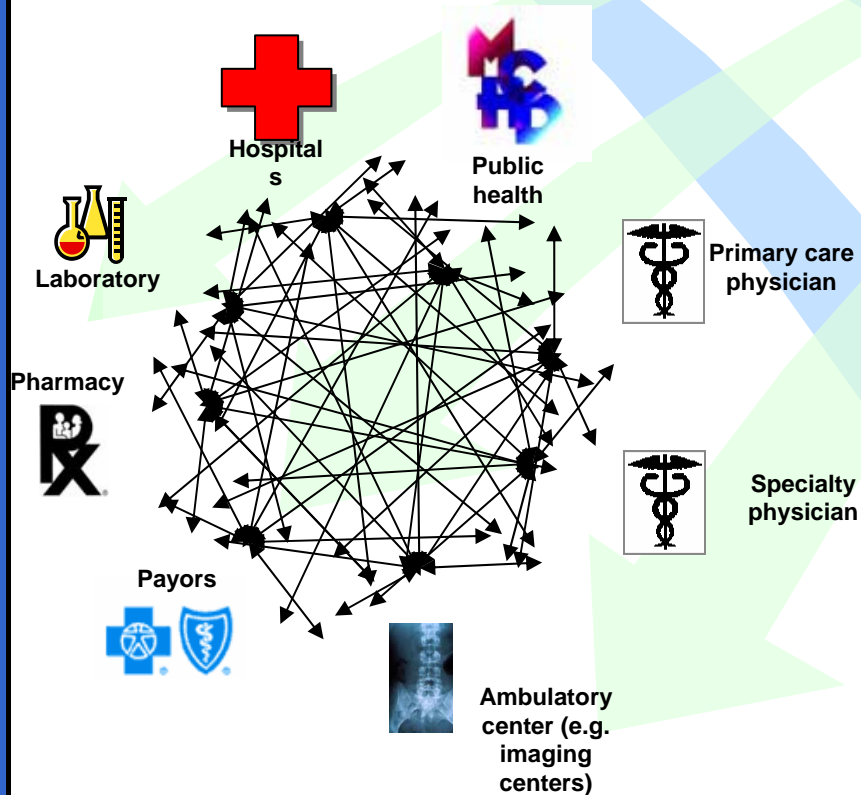
Spontaneous Generation?



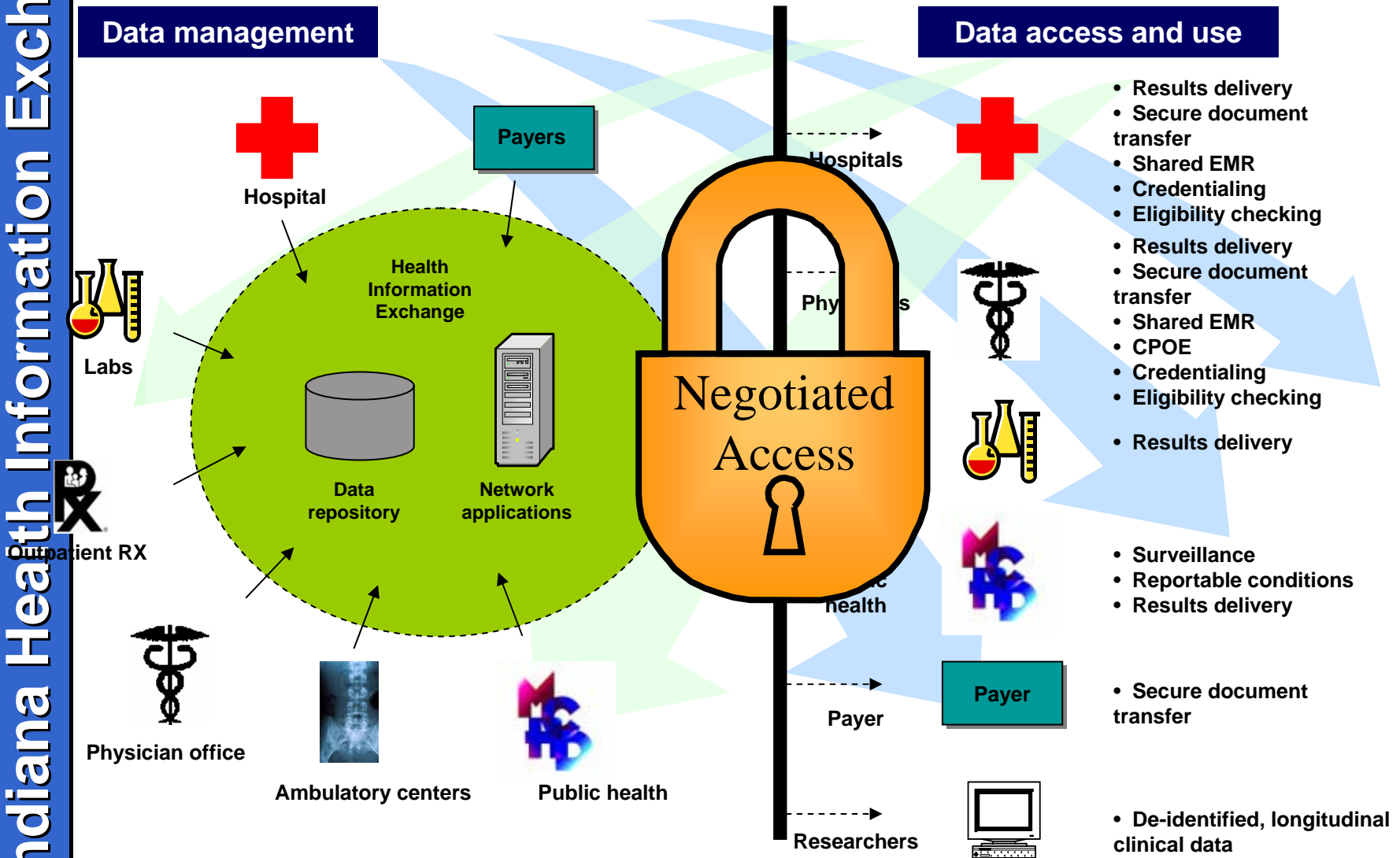
“Wiring” Healthcare

Current system fragments patient information and creates redundant, inefficient efforts

Future system will consolidate information and provide a foundation for unifying efforts



Data Reuse



Services (Data Rescue)



Care process

- Clinical Abstracts (push)
- Results review (pull)
- Clinical messaging (push)



Patient Safety

- Adverse drug event surveillance
- Medication history



Quality of care

- Clinical reminders
- Peer comparisons



Public Health

- Statistical surveillance (PHESS)
- Electronic laboratory reporting
- Immunization registry



Research

- De-identified population queries
- Identified queries

DOCS4DOCS®

Smiley, Amanda (Docs4Docs/ASMILEY)
Iumg - Pc Family Practice Center

General

Inbox

Inbox History
Report Search
Change Password
System Messages
Help
Logout

Document INBOX

Holds all new documents.

Filters:

Actions:

| | Provider | MRN | Patient Name | Arrival | Doc Type | Doc Details |
|--------------------------|-----------------|-----|--------------|------------------------|------------------------|--|
| <input type="checkbox"/> | Akosa Anthony N | | | 2004 07/14 10:16 PM | Radiology (Clarian) | Xray Chest PA and Lateral |
| <input type="checkbox"/> | Akosa Anthony N | | | 2004 07/14 10:16 PM | Radiology (Clarian) | Mammogram Screening Bilateral Digital DDI (Direct Digital Image) |
| <input type="checkbox"/> | Akosa Anthony N | | | 2004 07/16 10:38 PM | Radiology (Clarian) | Xray Knee Standing |
| <input type="checkbox"/> | Akosa Anthony N | | | 2004 07/16 10:38 PM | Radiology (Clarian) | Xray Foot 2 Views |
| <input type="checkbox"/> | Akosa Anthony N | | | 2004 07/16 10:28 PM | Radiology (Clarian) | Xray Knee 3 Views |
| <input type="checkbox"/> | Akosa Anthony N | | | 2004 07/14 10:16 PM | Radiology (Clarian) | Xray Chest PA and Lateral |
| <input type="checkbox"/> | Akosa Anthony N | | | 2004 07/16 10:28 PM | Radiology (Clarian) | MR Brain - Head - Without then With Contrast |
| <input type="checkbox"/> | Akosa Anthony N | | | 2004 07/08 03:11 PM | Radiology (Clarian) | Xray Abdomen KUB |
| <input type="checkbox"/> | Akosa Anthony N | | | 2004 07/19 10:44 PM | Radiology (Clarian) | Xray Elbow |
| <input type="checkbox"/> | Akosa Anthony N | | | 2004 07/13 10:26 PM | Radiology (Clarian) | Xray Hand Min 3 Views |
| <input type="checkbox"/> | Akosa Anthony N | | | 2004 07/15 10:37 PM | Radiology (Clarian) | Xray Chest PA and Lateral |
| <input type="checkbox"/> | Akosa Anthony N | | | 2004 07/16 10:27 PM | Radiology (Clarian) | Xray Wrist AP and Lateral |
| <input type="checkbox"/> | Akosa Anthony N | | | 2004 07/09 03:36 PM | Radiology (Clarian) | US Renal |
| <input type="checkbox"/> | Allen Deborah I | | | 2004 07/12 05:31 PM | Radiology (Clarian) | Xray Spine Scoliosis AP and Lateral |

DOCS4DOCS

XUE,JACK

LAB AUDIT

General

- New Documents
- Document Archive
- Document Search
- Change Practice
- Change Password
- Help
- Logout

Practice Admin

- Add/Remove Users
- Add/Remove Providers
- Provider Subscriptions
- Subgroup Management

Administrative

- Add User
- Remove User
- Edit User
- Provider Master Entry
- Add Practice
- Edit Practice
- Remove Practice
- Email Reports
- System Status
- Intake Status
- Exception Editor
- Fax Status

Bookmark

- Providers
 - BAELE, JOSEP
 - DALY, ROBERT
 - ROUGRAFF, BF
 - ROUGRAFF, BF
 - ROUGRAFF, BF
 - ROUGRAFF, BF
 - ROUGRAFF, BF
 - ROUGRAFF, BF
 - {Table of Contents}
- Patients
 - MKCHEMTEST1
 - MKFATPT1A,TE
 - MKFATPT1A,TE
 - MKHEMTEST1,
 - MKLABTEST1,T
 - MKNCH1,TESTM
 - MKROCHE,TES
 - MKROCHE,TES
 - {Table of Contents}

Methodist Hospital
Department of Pathology and
Laboratory Medicine
1701 North Senate Boulevard
Indianapolis, IN 46206

Clarian Health
Methodist • IU • Riley

Copy For: ROUGRAFF BRUCE

NAME: MKHEMTEST1,TESTMH
MRN: 0072272030
DOB: 09/10/1967 SEX: Female
HOME: (457) 349-9794

Date: Mon 02/23/2004 01:23 PM Accession #04-054-000014 Account: 000100010321
Ordered by: ROUGRAFF, BRUCE T Location: HRTF

*** Hemogram with Platelet Count ***

| Procedure | Units | Ref Range |
|-----------|---------------------|-------------|
| WBC | 22.2 H k/cumm | [4.5-11.5] |
| RBC | 3.23 L million/cumm | [4.00-5.40] |
| Hgb | 9.8 L gm/dL | [12.0-15.0] |
| Hct | 30.7 L % | [35.0-49.0] |
| MCV | 95 H fL | [80-94] |
| MCH | 30.3 pg | [26.0-32.0] |
| MCHC | 31.9 L gm/dL | [32.0-36.0] |
| RDW | 16.0 H % | [11.5-14.5] |
| Platelet | 298 k/cumm | [150-450] |
| MPV | 9.0 fL | [6.3-9.6] |

All lab performed at Clarian/Methodist Lab 1701 N Senate Blvd Indpls, IN 46202

7 of 9 8.5 x 11 in

Methodist Hospital
Emergency Medicine and
Trauma Center
1701 North Senate Blvd
Indianapolis, IN 46206

MEDICATION HISTORY



Name: Mkhemtest, mhtest
MRN: 007222030
DOB: 09/10/67 Sex: Female
Home: (457) 348-9794

Date: Mon 05/22/2005 01:23 PM
Attending: Rougraf, Bruce T

Visit: #04-054-000014

Account: 010001000234
Location: EMTC

PROPOXY-N/APAP 100-650 TAB

Dispensed: 2005-05-13 #16 at CVS PHARMACY 1518729



NITROGLYCERIN 0.4 MG/HR PTC ordered: AZ1044685

Dispensed: 2005-05-12 #30 at CVS PHARMACY 1518729



VERAPAMIL 240 MG TABLET SA ordered: AB1315200

Dispensed: 2005-05-04 #60 at CVS PHARMACY 1518729
2005-03-28 #60
2005-02-15 #60
2005-01-13 #60

a light green,
oblong, scored,
film-coated tablet
imprinted with
"logo and logo"
and "ST".



Medication Possession Ration 1.4

POTASSIUM CL 20 MEQ TAB SA ordered: AB1315200

Dispensed: 2005-05-03 #60 at CVS PHARMACY 1518729
2005-03-28 #60
2005-02-15 #60
2005-01-13 #60



Full Screen
Close Full Screen

LOVASTATIN 40 MG TABLET ordered by: BC5175535

Dispensed: 2005-04-29 #30 at CVS PHARMACY 1518729



SAMPLE, INPC WISHARD

#X999999-8 Ph:

Age:28yr Race:W Sex:F

INPC EMERGENCY CARE ABSTRACT

ER CHIEF COMPLAINT
(no data found)

HISTORY & PHYSICAL

DX & COMPLAINTS 09-Dec-03
 OOPD ACTIVE
 condyloma accuminatum ACTIVE
 pregnancy normal care
 vulva CA
 marked dysplasia [a]
 (a) From WISHARD, Wishard Appointment
 Scheduler), 108, X999999-8 SAMPLE, INPC
 WISHARD

E.R. DIAGNOSIS 07-Sep-09
 bronchitis [a]
 (a) From WISHARD, X999999-8 SAMPLE, INPC
 WISHARD

ALLERGIES 12-Aug-03
 DRUG ALLERGIES DAKVOCTE,
 HYDROCODONE 5/ACETAMINOPHEN 500 [a]
 (a) From WISHARD, MMH Online Results,
 X999999-8 SAMPLE, INPC WISHARD

BLOOD TYPE

PRENATAL ABC RH 06-Aug-03
 ABO GROUP group A (a)
 Rh neg (a)
 ANTIBODY SCREEN neg (a)
 (a) From WISHARD, X999999-8 SAMPLE, INPC
 WISHARD

VITALS

INPATIENT VITALS 08-Aug-03
 WEIGHT AUTO 108.9 [a] lb
 TEMP AUTO ORAL 99.9°F [a] DEGP
 PULSE AUTO 75 [a] /MIN
 RESP RATE AUTO 20 [a] /MIN
 SYSTOLIC BP AUTO 103 [a] mm Hg
 DIASTOLIC BP AUTO 62 [a] mm Hg
 (a) From WISHARD, Wishard VITALSHT,
 X999999-8 SAMPLE, INPC WISHARD

CHEMISTRY

ELECTROLYTE PKFL 12-Aug-03
 SODIUM 135 [a] mmol/L
 POTASSIUM 4.2 [a] mmol/L
 CHLORIDE 103 [a] mmol/L
 CO2-TOT 29 [a] mmol/L
 (a) From WISHARD, X999999-8 SAMPLE, INPC
 WISHARD

CHEM 16 09-Aug-03
 BUN 10 [a] mg/dL
 GLUCOSE 95 [a] mg/dL
 CREATININE 0.8 [a] mg/dL

CHEMISTRY (continued)

CHEM 16 12-Aug-03
 CALCIUM 8.3*L [a] mg/dL
 PHOSPHORUS 2.4*L [a] mg/dL
 URIC ACID 3.9 [a] mg/dL
 CHOLESTEROL 151 [a] mg/dL
 PROTEIN-TOTAL 5.3*L [a] g/dL
 ALBUMIN 2.6*L [a] g/dL
 BILIRUBIN TOTAL 0.5 [a] mg/dL
 ALK PHOS 61 [a] UNITS/L
 SGOT (AST) 17 [a] UNITS/L
 SGPT (ALT) 30 [a] UNITS/L
 AMYLASE <30*L [a] UNITS/L
 (a) From WISHARD, X999999-8 SAMPLE, INPC
 WISHARD

HEMATOLOGY

BLOOD CELL PROFILE 11-Aug-03
 WBC 10.7 [a] k/cumm
 SSC 2.9*L [a] million/
 HGB 10.1*L [a] g/dL
 HCT 30*L [a] %
 MCV 100*H [a] fL
 MCH 35*H [a] pg
 MCHC 34 [a] g/dL
 RDW 13.3 [a] %
 (a) From WISHARD, X999999-8 SAMPLE, INPC
 WISHARD

DIFFERENTIAL 07-Sep-09
 LYMPHS 8*L [a] %
 MONO 8 [a] %
 PLT EST adeq [a]
 BANDS 3 [a] %
 MACROS rare [a]
 VACILLATED POLYS present [a]
 GIANT PLATELETS present [a]
 (a) From WISHARD, X999999-8 SAMPLE, INPC
 WISHARD

COMMON HEMATOLOGY STUDIES 11-Aug-03
 PLT CT 225 [a] k/cumm
 P.T. 12.0 [a] sec
 (a) From WISHARD, X999999-8 SAMPLE, INPC
 WISHARD

ROUTINE COAG 06-Aug-03
 PROTIME (ISI) 10.5 [a] sec
 INR 0.9 [a]
 APTT PATIENT 33 [a] sec
 (a) From WISHARD, X999999-8 SAMPLE, INPC

HEMATOLOGY (continued)

ROUTINE COAG 06-Aug-03
 WISHARD
 CARDIOVASCULAR
 EKG 06-Aug-03
 normal sinus rhythm, normal ECG [a]
 (a) From WISHARD, Wishard EKG,
 X999999-8 SAMPLE, INPC WISHARD

PRESCRIPTIONS

RECENT MEDICATION HISTORY
 DIGITEX 250 MG TABLET 01-Aug-03
 DIGITEX 125 MG TABLET 01-Jul-03
 LAMOXIN 50 MG/ML ELIXIR 01-May-03
 From 2222 SCHUR, BERT L

This partial medical history contains confidential patient information. Unauthorized use is subject to disciplinary action. File in correspondence section of medical record. Mental health, STDs, drug and alcohol abuse data from this institution only. More on-line at INPC.ORG.

Data From: WISHARD - CLARIAN - MARION COUNTY

SAMPLE, INPC WISHARD #X999999-8

Printed 18-Feb-05 at WISHARD

Help Logout Cancel OK



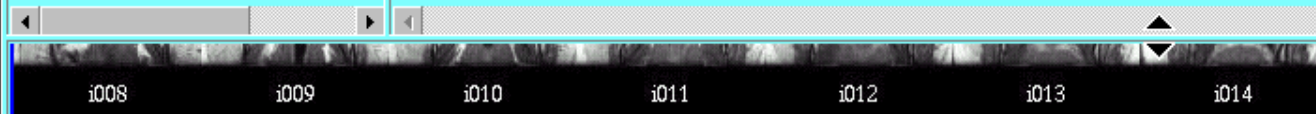
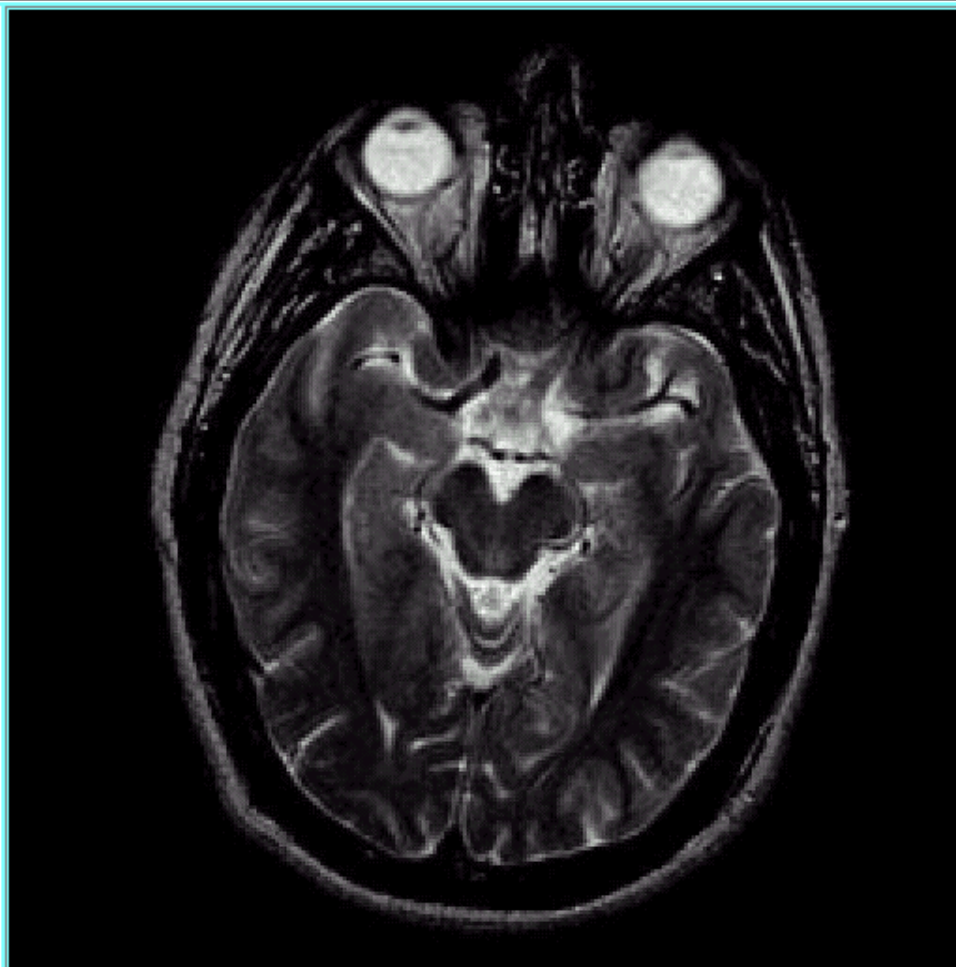
SELLA TURCICA MRI
MRI SELLA-PITUITARY
W/CONTRAST
11-May-00 08:02 AM ?

StepSize: 1
Series: 4 Image: 8 Of: 19

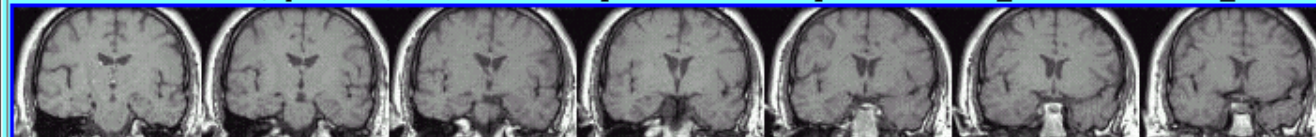
Zoom: ☐ 1/4 ☐ Full ☐ 4x

Window Level Controls:
W: 0 L: 0 apply
or pick preset: Uniform

Select series:
(1)[15] T1;Spin Echo;SAG T1
(2)[15] T1;Spin Echo;COR T1
(3)[15] T1;Spin Echo;COR T1
(4)[19] Series 4;Spin Echo;A2
(5)[19] Series 5;Research Mr
(6)[16] T1;Spin Echo;SAG LC



Contact Sheets for T1;Spin Echo;COR T1 ScanSequence: SE ScanOptions: GRAPH_GEMS\NPW\CS_GEMS\ASP [15] leveled for MRA



Auto



Name: TEST1

PATIENT 1-94EK EKG STATION 1974

Loc : A227

Age: 43 normal ECG

MR #: 9-1

Tec: 14

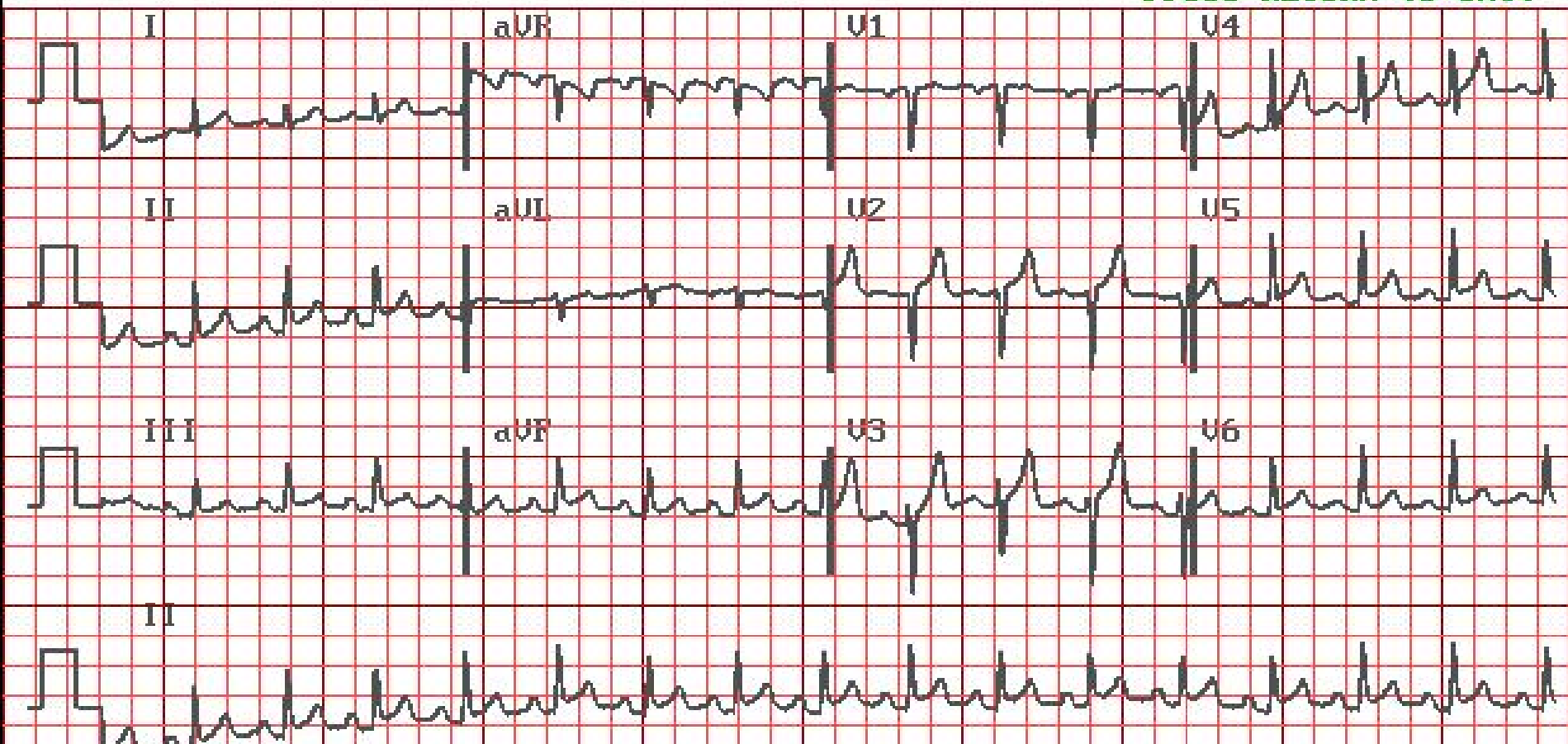
10:46 09/01/94

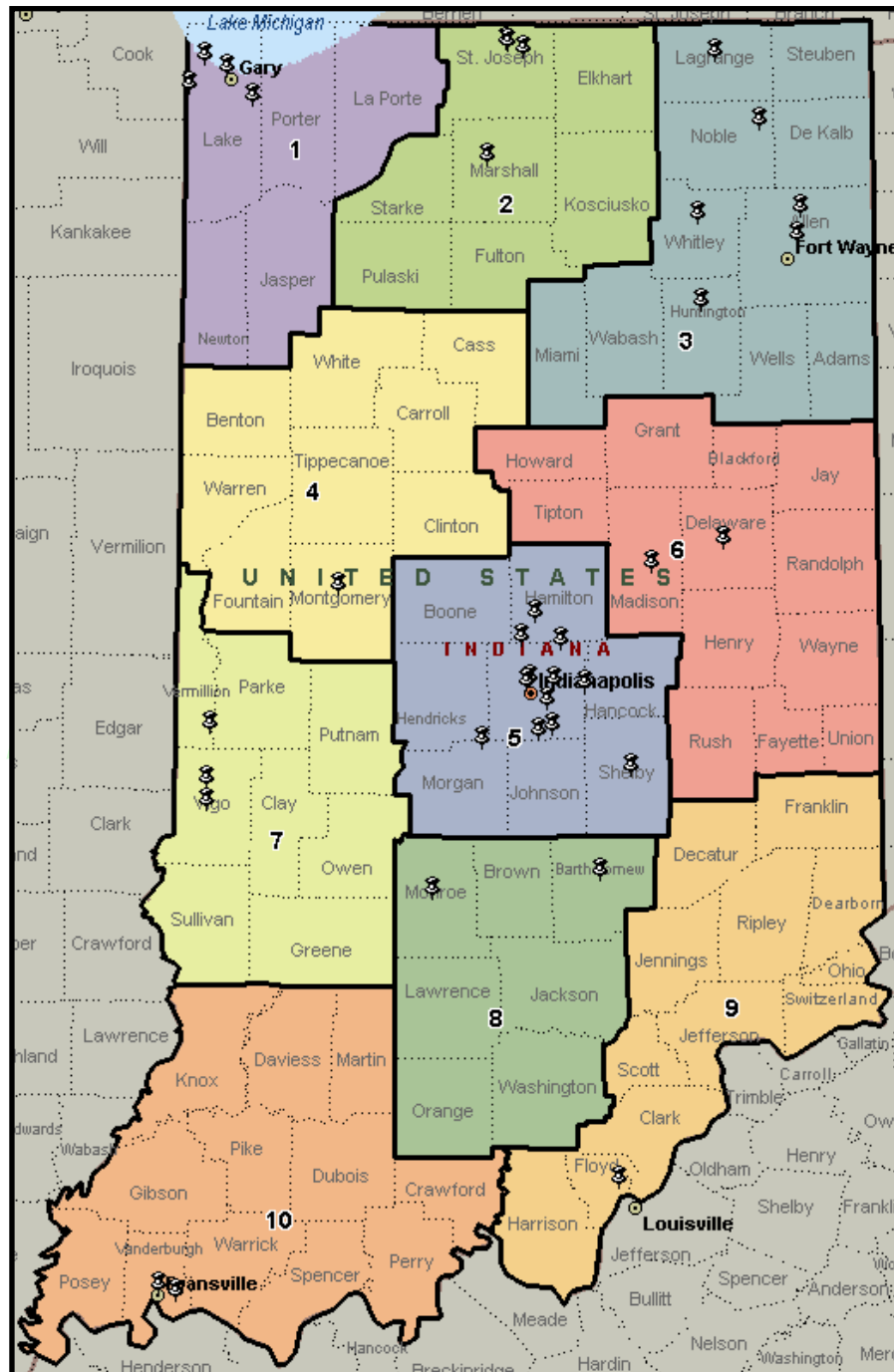
Intervals

Axes

| HR | PR | QRS | QT/QTc | P | QRS | T |
|----|-----|-----|---------|----|-----|----|
| 96 | 172 | 76 | 312/366 | 69 | 69 | 55 |

Press RETURN to exit





Public Health Emergency Surveillance System (PHESS)

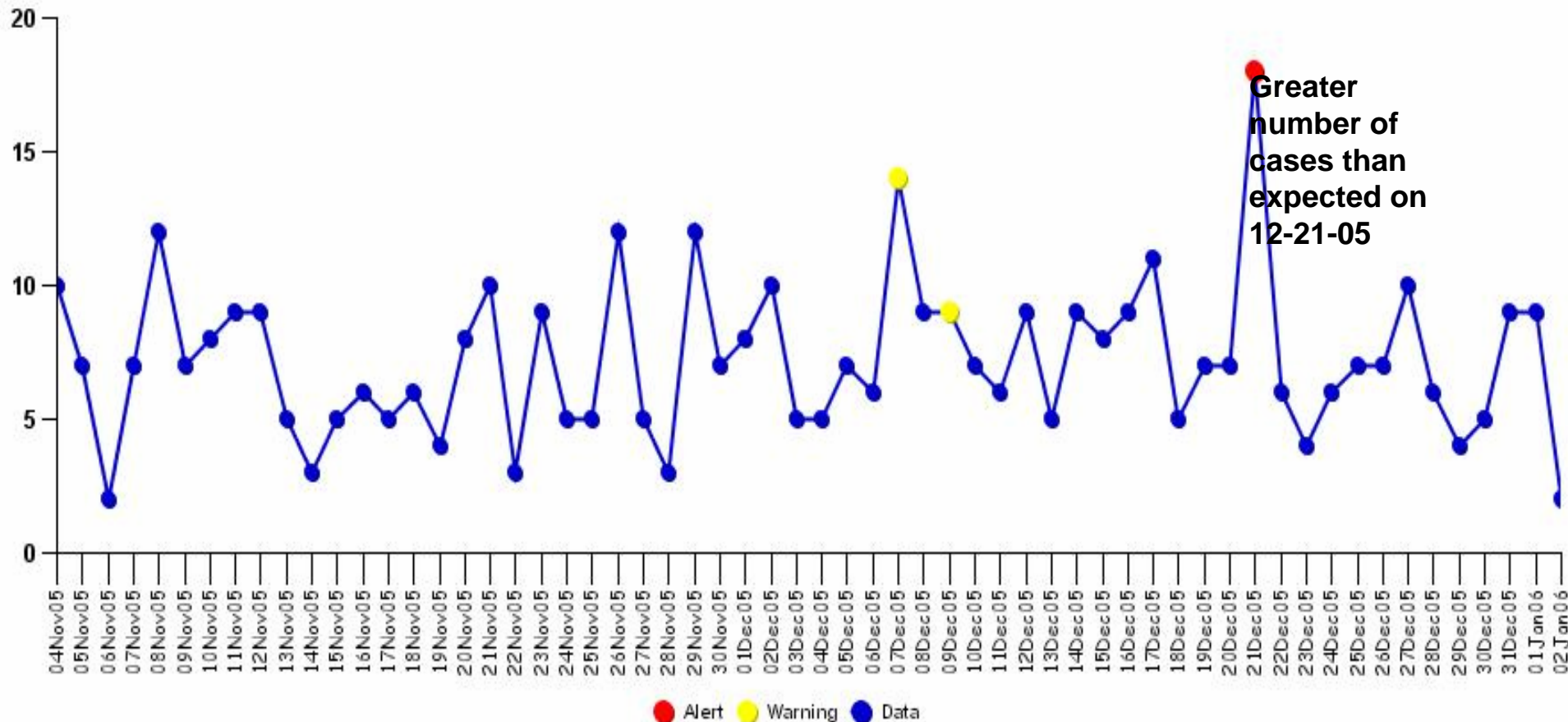
- 70 Hospitals connected
- > 6,000 ED visits per day



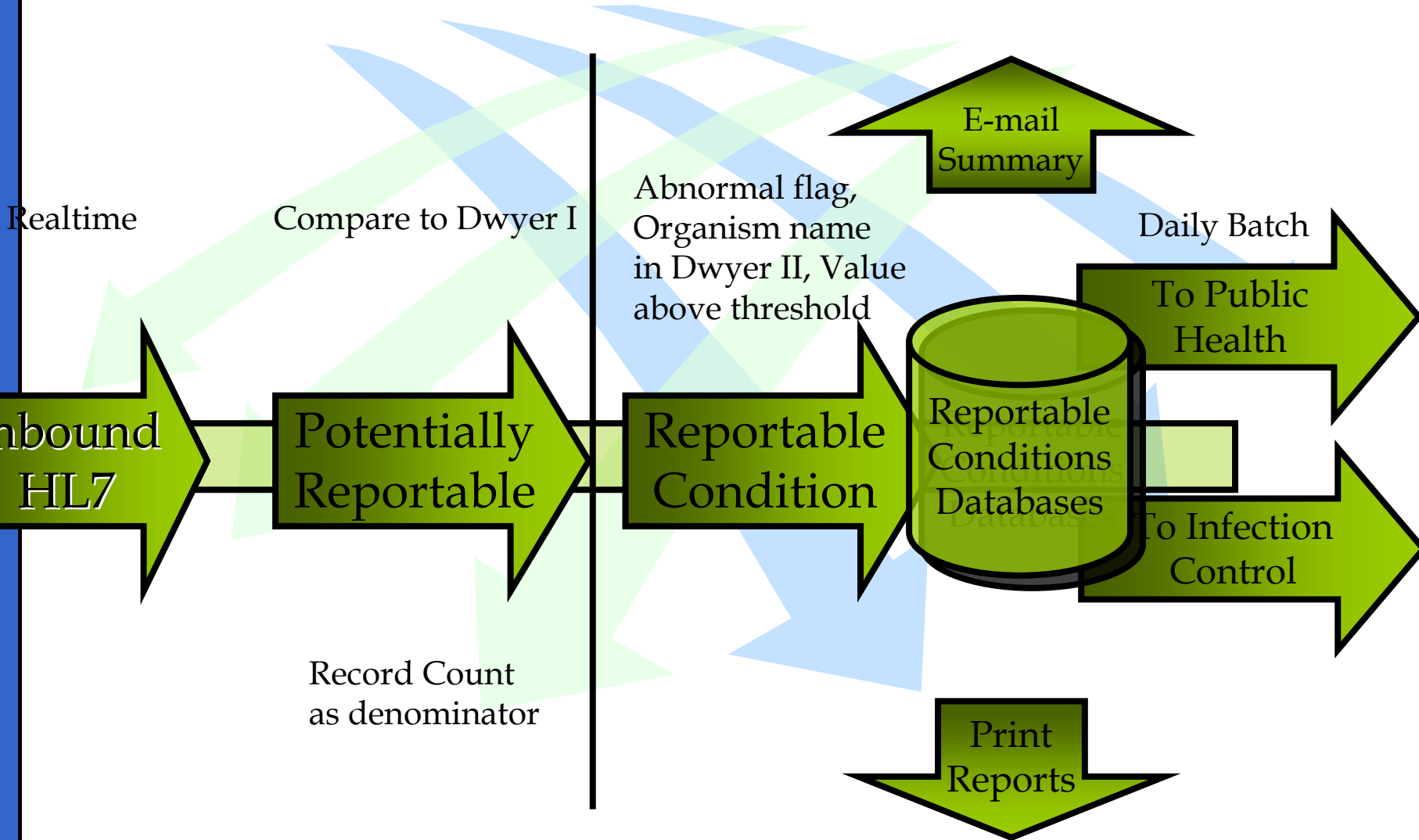
**Indiana State
Department of Health**

GI Syndrome Outbreak

Daily Data Counts



RIPSS Architecture



Subject: INPC file transfer to MCHD completed successfully!
 Date: Tue, 15 Aug 2006 19:57:28 -0400
 From: INPC <inpc@regenstrief.org>
 Reply-To: <inpc@regenstrief.org>
 To: INPC <inpc@regenstrief.org>

=====

INPC - Indiana Network for Patient Care

=====

Public Health Electronic Reporting Summary

The following table summarizes the data that has been added to the database in the past 3 days.

08/15/06 08/14/06 08/13/06 08/12/06

12:00 AM 12:00 AM 12:00 AM 12:00 AM

TO TO TO TO

04:00 PM 11:59 PM 11:59 PM 11:59 PM

| Cases | Cases | Cases | Cases | Condition |
|--------------|-------|-------|-------|---------------------------------------|
| ----- | ----- | ----- | ----- | ----- |
| ANTIBIOTIC: | | | | |
| 1 | 0 | 0 | 0 | Enterococcus, Vancomycin-resistant |
| 3 | 8 | 5 | 9 | Staphylococcus, Methicillin-resistant |
| ENTERIC: | | | | |
| 1 | 1 | 0 | 0 | Campylobacteriosis |
| 1 | 0 | 0 | 0 | Escherichia coli O157:H7 infection |
| 1 | 1 | 0 | 0 | Hepatitis A |
| 1 | 1 | 1 | 0 | Salmonellosis, non-typhoid |
| HEPATITIS B: | | | | |
| 27 | 14 | 2 | 5 | Hepatitis B |

Subject: CDC Health Alert - Multiple States Investigating a Large Outbreak of E. coli O157:H7
From: [CDC Clinician Registry <clinicianOutreachcom@CDC.GOV>](mailto:clinicianOutreachcom@CDC.GOV)
Sender: [CDC's Clinician's Terrorism Update Listserv <CDC-CLINICIANTERRORISMANDEMERGRESUPDATES@LISTSERV.CDC.GOV>](mailto:CDC-CLINICIANTERRORISMANDEMERGRESUPDATES@LISTSERV.CDC.GOV)
Reply-To: clinicianoutreachcom@CDC.GOV
Date: 9/15/2006 8:36 AM
To: CDC-CLINICIANTERRORISMANDEMERGRESUPDATES@LISTSERV.CDC.GOV



CDC Clinician Communication

Information from Clinician Outreach and Communication Activity (COCA)

September 15, 2006

This is an official CDC Health Alert distributed via the Health Alert Network (HAN) on September 14, 2006, 23:00 EDT (11:00 PM EDT).

CDC Health Alert

Multiple States Investigating a Large Outbreak of E. coli O157:H7 Infections

Public health officials in multiple states, with the assistance of the Centers for Disease Control and Prevention, are investigating a large outbreak of E. coli O157:H7 infections. Thus far, 50 cases with isolates demonstrating pulsed-field gel electrophoresis (PFGE) CDC PulseNet pattern number EXHX01.0124, as determined by Xba restriction enzyme DNA digestion, have been reported from CT (1), ID (3), IN (4), MI (3), OR (5), NM (2), UT (11), WI (20). Eight patients developed the hemolytic uremic syndrome (HUS) and one patient died. Most cases are recent: for those with known illness onset, the range of onset is 08/25/2006 to 09/03/2006. The outbreak is likely ongoing.

Preliminary findings from case interviews indicate that pre-packaged spinach is the most likely source. Additional investigation is necessary to determine the brand or brands of pre-packaged spinach involved. State and CDC investigators are working with FDA to quickly gather information

