



NY State Health Commerce System

A Configurable System for Emergency Response used by NY State



Essential Building Blocks for National Integrated Information Systems, Public Health **Preparedness, Planning**, Communication, Response and Recovery



Hospital Emergency Response System

- Developed in response to 9/11/01 attack
- Based on Columbia-Presbyterian Hospital experience
- Requirements
 - Access through NY State Health Commerce System (Internet)
 - Quick activation and customization
 - Use Public Health directory of organizational structures and person/contacts information for alerts and secure discussion
 - Role-based access from Public Health directory
- Activations to-date:
 - Orange alert notification
 - Power failure
 - Pediatric influenza trends
 - Airborne isolation rooms survey
 - Needs assessments survey
 - Numerous regional drills



System Architecture

- System Hardware
 - Sun Microsystems – Solaris OS
- Database Management System
 - Sybase Adaptive Server Enterprise
- Software Development Language
 - Java and XML/XSLT
- Application Server
 - BEA WebLogic Server
- Frameworks
 - Currently locally developed



Data is Collected for an Incident

- Incidents can be emergency events or surveys
- Facilities (hospitals) are assigned to incidents
- Data is collected for facilities assigned to an incident

Version: 1	Incident Definition and Administration Demo System	Date: 4/23/2004 Time: 11:10:32 AM								
Define Incident	Assign Facilities	Table Initialization	Alerts/SDF	Modify Pages						
DisplayDictionary AssignedFacilities ImportDictionary Import from File View Form										
Incident Id:	151	Add Date: 2004-04-19 13:51:26.783								
Template Type:	General Incident									
Incident Name:	<input type="text" value="Demo Incident"/>	Upd Date: 2004-04-19 13:51:26.873								
Description:	<input type="text" value="Used for Demo at PHIN Conference"/>	Upd User: jpn01								
Incident Type:	<input type="text" value="Emergency Event"/>									
Status:	<input type="text" value="Active"/>									
Report Visibility:	<input type="text" value="Open"/>									
<input type="button" value="First"/>	<input type="button" value="Last"/>	<input type="button" value="Prev"/>	<input type="button" value="Next"/>	<input type="button" value="Browse"/>	<input type="button" value="Search"/>	<input type="button" value="Initialize"/>	<input type="button" value="Save"/>	<input type="button" value="Delete"/>	<input type="button" value="Reset"/>	<input type="button" value="Exit"/>



Facilities are Assigned to Incidents

- Individual hospitals can be assigned, or hospital groups (regions, counties, hospital associations, etc.)

Version: 1 Date: 4/23/2004
Assign Facilities to an Incident **Demo System** Time: 11:15:23 AM

Incident	Assign Facilities	Modify Pages
----------	-------------------	--------------

Incident: Demo Incident

— Available to choose from —

- #Group county: allegany
- #Group county: bronx
- #Group county: broome
- #Group county: cattaraugus
- #Group county: cayuga
- #Group county: chautauqua
- #Group county: chemung
- #Group county: chenango
- #Group county: clinton
- #Group county: columbia
- #Group county: cortland
- #Group county: delaware
- #Group county: dutchess
- #Group county: erie
- #Group county: essex
- #Group county: franklin
- #Group county: fulton
- #Group county: genesee
- #Group county: herkimer

— Currently selected from list —

- albany-albany medical center hospital
- albany-albany medical center south clinical campus
- albany-albany memorial hospital
- albany-capital region amb surgery ctr
- albany-century same day surgery
- albany-eddy cohoes rehabilitation center
- albany-healthcare association of new york state (hanys)
- albany-internal test hospital for doh use
- albany-kaiser permanente
- albany-new england laser and cosmetic surgery center
- albany-samuel s stratton v.a. medical center
- albany-st peters hospital



Hospital Access to Incidents

Version: 1 Hospital Emergency Data Reporting **Demo System** Date: 4/23/2004
 Time: 11:49:30 AM

Reporting Events: albany - Albany Medical Center Hospital (Demo Incident) ▾

Submit Exit

Version: 1 Hospital Emergency Data Reporting **Demo System** Date: 4/19/2004
 Time: 6:58:33 PM

Main Beds

Hospital Capacity Main Page

Albany Medical Center Hospital Demo Incident

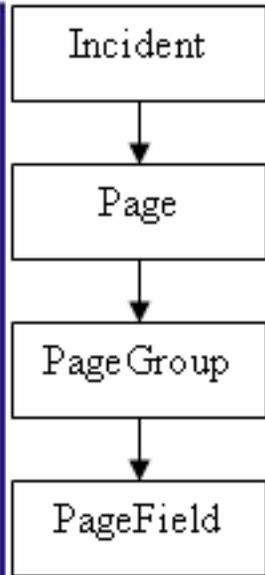
Incident Commander	Incident Commander	Operations Commander	Operations Commander
Incident Commander	John Napoli 14:14:52	Operations Commander	Ivan Gotham 14:15:41
Shift	<input checked="" type="radio"/> Day <input type="radio"/> Evening <input type="radio"/> Night 14:14:52	Shift	<input checked="" type="radio"/> Day <input type="radio"/> Evening <input type="radio"/> Night 14:15:41
Phone Number	518-473-1809 14:14:52	Phone	518-473-1809 14:15:41
Facility Problem Text	This is a demo for the PHIN Conference. 14:14:52	Liaison Officer	Scott Stagnitta 14:15:41
		Phone	518-473-1809 14:15:41

Save Submit to DOH Exit Reset

[PrintForm](#)



Form Presentation



Version: 1 Hospital Emergency Data Reporting **Demo System** Date: 4/19/2004
Time: 6:58:33 PM

Main Beds

Hospital Capacity Main Page

Albany Medical Center Hospital Demo Incident

Incident Commander	Incident Commander	Operations Commander	Operations Commander
Incident Commander	John Napoli	Operations Commander	Ivan Gotham
Shift	<input checked="" type="radio"/> Day <input type="radio"/> Evening <input type="radio"/> Night	Shift	<input checked="" type="radio"/> Day <input type="radio"/> Evening <input type="radio"/> Night
Phone Number	518-473-1809	Phone	518-473-1809
Facility Problem Text	This is a demo for the PHIN Conference.	Liaison Officer	Scott Stagnitta
		Phone	518-473-1809
	14:14:52		14:15:41

Save Submit to DOH Exit Reset

[PrintForm](#)



User Interface to Modify Form

Version: 1 Hospital Emergency Data Reporting **Demo System** Date: 4/20/2004
Time: 10:48:41 AM

[Main](#) [Beds](#)

Hospital Capacity Main Page

N/A [Return](#) [Refresh from Dictionary](#) [Create New Field for Incident](#) **Demo Incident**

[Modify Page](#)

Modify Group		AssignFields	
Incident Commander	Incident Commander	Operations Commander	Operations Commander
Incident Commander	<input type="text"/>	Operations Commander	<input type="text"/>
Shift	<input type="radio"/> Day <input type="radio"/> Evening <input type="radio"/> Night	Shift	<input type="radio"/> Day <input type="radio"/> Evening <input type="radio"/> Night
Phone Number	<input type="text"/>	Phone	<input type="text"/>
Facility Problem Text	<input type="text"/>	Liaison Officer	<input type="text"/>
	156	Phone	160
	157		161
	158		162
			503
	506		655

[Exit](#) [Reset](#)

- Add, Modify, Delete Fields from Template
- Assign Fields from Template to the Group
- Add, Modify, Delete Group Information
- Add, Modify, Delete Page Information



Field Maintenance

Incident Commander

Field Categories	
A	Available
B	Basic
D	Description for another field
N	Needs
S	Associated with another field

Version: 1
Create Field
Date: 4/20/2004
Time: 11:15:35 AM

Template Manager
Create Fields

[View Form](#)

Template Name: General Incident

Field: 156 Add Date:

Field Name: Upd Date: 2002-05-20 11:12:35.773

Field Title: Upd User: gxd13

Incident Commander

Description:

Type:

Length (display):

Length (database):

Field Category:

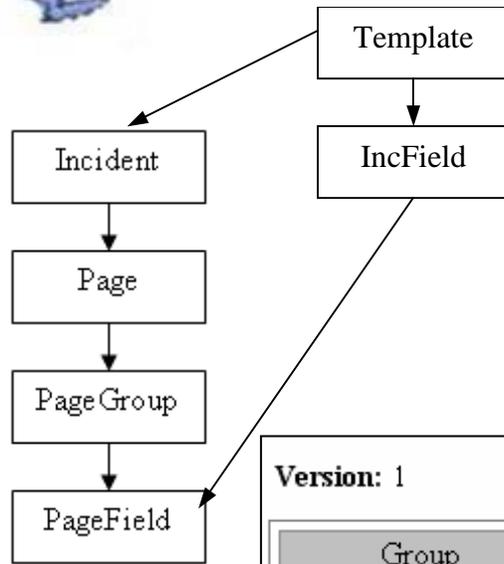
Link to Desc:

First
Last
Prev
Next
Browse
Search
Initialize
Save
Delete
Reset
Exit

Field Types	
A	TextArea
B	CheckBox
C	TextBox
D	Date
L	Lookup
M	CheckBoxMulti
N	Numeric
R	RadioButton
T	TextAreaLong
V	ParmMessage
Y	Read-Only



Assign Field from Template



- Field definitions belong to templates
- Fields definitions are separate from the presentation
- An incident get its fields from one template
- Changes to field definitions are reflected across all incidents using that template

Version: 1 Date: 4/20/2004
Assign Fields to a Group **Demo System** Time: 11:43:13 AM

[View Form](#)

Group: Adult Beds

----- Available to choose from -----		----- Currently selected from list -----
Adlt Dialysis-Mach (Avail)	>>	Adult General Medical/Surgical
Adlt Mob-Card-Mon (Avail)	<<	Adult Critical Care
Adlt Mob-Card-Mon (Need)	Up	Adult OR Beds
Admitted Adult Total	Down	Adult ICU
Admitted Children Total	Submit	Adult Neg Press Isolation
Adult Dialysis Mach (Need)		Adult Emergency
Adult Mortalities		Adult burn beds
Adult Seen Total		Adult Other (1) (Desc)
Adult Ventilators (Avail)		Adult Other (1)
Adult Ventilators (Need)		Adult Other (2) (Desc)
Adults Admitted		Adult Other (2)
Adults Seen		
Adults Waiting		
Anesthesiologists (Available)		



Each Cell is a Table Row

Version: 1 Hospital Emergency Data Reporting **Demo System** Date: 4/19/2004 Time: 6:58:33 PM

Main Beds

Hospital Capacity Main Page

Albany Medical Center Hospital Demo Incident

Incident Commander	Incident Commander	Operations Commander	Operations Commander
Incident Commander	<input type="text" value="John Napoli"/> 14:14:52	Operations Commander	<input type="text" value="Ivan Gotham"/> 14:15:41
Shift	<input checked="" type="radio"/> Day <input type="radio"/> Evening <input type="radio"/> Night 14:14:52	Shift	<input checked="" type="radio"/> Day <input type="radio"/> Evening <input type="radio"/> Night 14:15:41
Phone Number	<input type="text" value="518-473-1809"/> 14:14:52	Phone	<input type="text" value="518-473-1809"/> 14:15:41
Facility Problem Text	<input type="text" value="This is a demo for the PHIN Conference."/> 14:14:52	Liaison Officer	<input type="text" value="Scott Stagnitta"/> 14:15:41
		Phone	<input type="text" value="518-473-1809"/> 14:15:41

[PrintForm](#)

- When the user clicks on the Save button, the data is stored in a table with each cell represented as a row

inc_id	fac_id	rpt_id	fld_id	fld_value
151	161	1	156	John Napoli
151	161	1	157	D
151	161	1	158	518-473-1809
151	161	1	160	Ivan Gotham
151	161	1	161	D
151	161	1	162	518-473-1809
151	161	1	175	Other kind of bed
151	161	1	503	Scott Stagnitta
151	161	1	506	This is a demo for the PHIN Conference.
151	161	1	655	518-473-1809



Data is Archived and Reportable

Version: 1 Hospital Emergency Data Reporting **Demo System** Date: 4/19/2004
Time: 6:58:33 PM

Main Beds

Hospital Capacity Main Page

Albany Medical Center Hospital Demo Incident

Incident Commander	Incident Commander	Operations Commander	Operations Commander
Incident Commander: John Napoli Shift: <input checked="" type="radio"/> Day <input type="radio"/> Evening <input type="radio"/> Night Phone Number: 518-473-1809 Facility Problem Text: This is a demo for the PHIN Conference.	14:14:52	Operations Commander: Ivan Gotham Shift: <input checked="" type="radio"/> Day <input type="radio"/> Evening <input type="radio"/> Night Phone: 518-473-1809 Liaison Officer: Scott Stagnitta Phone: 518-473-1809	14:15:41

Save Submit to DOH Exit Reset

[PrintForm](#)

- When data is Submitted to DOH an historical record is created
- Data is also saved in a more traditional format
- Save and Submit capability based on user roles

inc_id	fac_id	rpt_id	fld_id	fld_value	fld_upd_date
151	161	1	156	John Napoli	Apr 19 2004 2:14PM
151	161	1	157	D	Apr 19 2004 2:14PM
151	161	1	158	518-473-1809	Apr 19 2004 2:14PM
151	161	1	160	Ivan Gotham	Apr 19 2004 2:15PM
151	161	1	161	D	Apr 19 2004 2:15PM
151	161	1	162	518-473-1809	Apr 19 2004 2:15PM
151	161	1	175	Other kind of bed	Apr 19 2004 2:16PM
151	161	1	503	Scott Stagnitta	Apr 19 2004 2:15PM
151	161	1	506	This is a demo for the PHIN Conference.	Apr 19 2004 2:14PM
151	161	1	655	518-473-1809	Apr 19 2004 2:15PM

inc_id	fac_id	rpt_id	inc_comm_name	inc_comm_phone	inc_comm_shift	etc.
151	161	1	John Napoli	518-473-1809	D	etc.
etc.						



Detail Report (Sent to Excel)

	A	B	C	D	E	F
1		Facility Detail Report Demo System			Date: 4/23/2004	
2	Version: 1				Time: 1:32:28 PM	
3						
4	Description	Total (Can Prov)	Total (Need)	ALBANY-Albany Medical Center Hospital	ALBANY-Albany Medical Center South Clinical Campus	ALBANY-Albany Memorial Hospital
5						
6	Incident Commander					
7	Incident Commander			John Napoli	Test	Peter Pan
8	Shift			D		
9	Phone Number			518-473-1809		
10	Facility Problem Text			This is a demo for the PHIN		
11	Operations Commander					
12	Operations Commander			Ivan Gotham		
13	Shift			D		
14	Phone			518-473-1809		
15	Liaison Officer			Scott Stagnitta		
16	Phone			518-473-1809		
17	Adult Beds					
18	General Medical/Surgical	45		22	22	1
19	Critical Care	90			88	2
20	OR Rooms	14			11	3
21	Adult ICU	4				4
22	Negative Pressure Isolation	5				5
23	Emergency	6				6
24	Burn	7				7
25				1		8
26	Other (1)	9		Other kind of bed		Another one
27	Other (2)	0				
28	Pediatric Beds					
29	General Medical/Surgical	111		11	99	1
30	Critical Care	16			14	2



Summary Report

Version: 1 Hospital Emergency Data Reporting Date: 4/20/2004
Time: 10:26:17 AM

[Main](#) [Beds](#)

Hospital Capacity Main Page

Demo Incident

Incident Commander Responses	Total amount	Highest count	Operations Commander Responses	Total amount	Highest count
Incident Commander	3		Operations Commander	1	

Incident Commander
Shift
Phone Number
Facility Problem Text

Version: 1 Hospital Emergency Data Reporting Date: 4/20/2004
Time: 10:26:52 AM

[Main](#) [Beds](#)

Beds

Demo Incident

Adult Available Beds	Responses	Total amount	Highest count	Pediatric Available Beds	Responses	Total amount	Highest count
General Medical/Surgical	3	45	22	General Medical/Surgical	3	111	99
Critical Care	2	90	88	Critical Care	2	16	14
OR Rooms	2	14	11	OR Rooms	2	19	16
Adult ICU	1	4	4	Pediatric ICU	1	4	4
Negative Pressure Isolation	1	5	5	Negative Pressure Isolation	1	5	5
Emergency	1	6	6	Pediatric Emergency	1	6	6
Burn	1	7	7	Burn	1	7	7
Other (1)	2	9	8	Other (1)	0		
Other (2)	0			Other (2)	0		
				Neonatal Intensive Care	0		



Summary Report Details

Version: 1 Hospital Emergency Data Reporting Date: 4/20/2004
Time: 10:26:52 AM

Main
Beds

Beds

Demo Incident

Adult Available Beds	Responses	Total amount	Highest count	Pediatric Available Beds	Responses	Total amount	Highest count
General Medical/Surgical	<u>3</u>	45	<u>22</u>	General Medical/Surgical	<u>3</u>	111	<u>99</u>
Critical Care	<u>2</u>	90	<u>88</u>	Critical Care	<u>2</u>	16	<u>14</u>
OR Rooms	<u>2</u>	14	<u>11</u>	OR Rooms	<u>2</u>	19	<u>16</u>
Adult ICU	<u>1</u>	4	<u>4</u>	Pediatric ICU	<u>1</u>	4	<u>4</u>
Negative Pressure Isolation	<u>1</u>	5	<u>5</u>	Negative Pressure Isolation	<u>1</u>	5	<u>5</u>
Emergency Burn							
Other (1)							
Other (2)							

Hospital Emergency Response Data System General
Field Reporting Demo System
 Demo Incident

Date: 4/20/2004
Time: 10:30:52 AM

Version: 1

[Return to Report](#)
Exit

County	Facility	Adult General Medical/Surgic
ALBANY	Albany Medical Center Hospital	22
ALBANY	Albany Medical Center South Clinical Campus	22
ALBANY	Albany Memorial Hospital	1





Other Features

- Role-based access
- Alerts and creation of secure discussion forum
- You can copy incidents from existing incidents
- You can import form layouts from Excel spreadsheets
- XML-configurable foundation classes used to build the application
- Repeating groups (one-to-many capability at group level)
- Field edits (required, required based on, etc.)
- Read-only fields pulled from other tables
- Delegation of responsibility to sub-commanders
- Statistical (SAS) reports based on incident history



Benefits and Disadvantages

- Benefits
 - Rapid deployment
 - Easy to customize
 - Form design the responsibility of the program areas (users)
- Disadvantages
 - More complex than typical applications
 - Application is more resource intensive
 - Memory problems caused by storing information in session and XML/XSLT usage



Future Activities

- Convert customized framework to more established standard framework (Struts)
- Use this model for other system (disease reporting, etc.)
- Change presentation model to allow different presentations based on XSLT translation
- Remove requirement of cellular storage of data
- Allow an incident to use multiple templates
- Allow field definitions to be specific to an incident
- Improve editing capability
- Form modifications deferred until all are approved
- Improve user interface
- Drills and stress testing to verify performance