2007 ESRI Health GIS Conference

Scottsdale, Arizona • October 7–10, 2007

Lighthouse Moments from ESRI Health & Human Services Users

Speakers

- **Chris McInnish**

  Deputy Commissioner, Alabama Department of Children's Affairs

- **David Gruber**

  Senior Assistant Commissioner

  Division of Health Infrastructure Preparedness & Emergency Response

  New Jersey Department of Health & Senior Services

- **Shiloh Turner**

  Director, Health Data Improvement

  The Health Foundation of Greater Cincinnati

ARMS

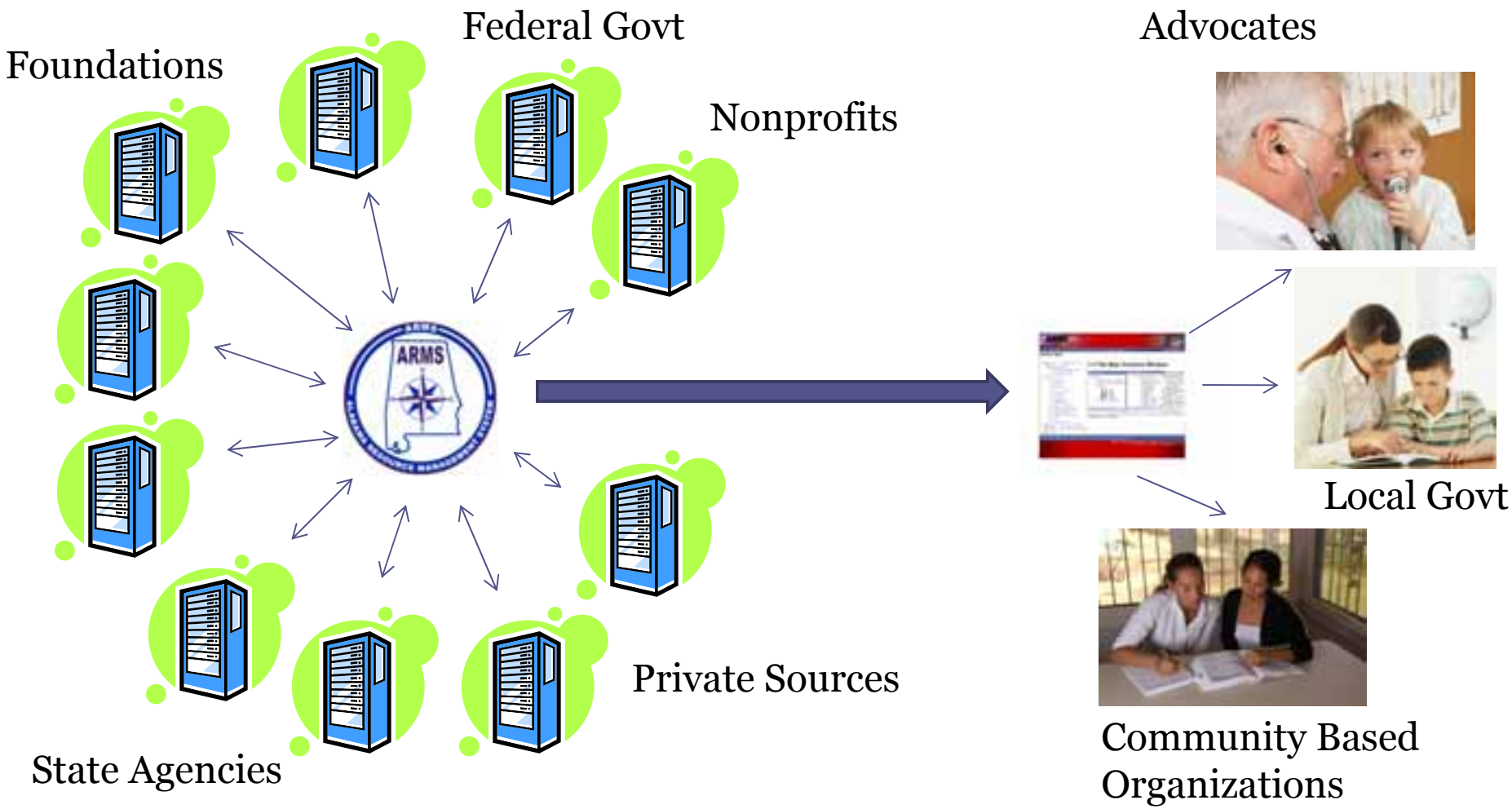
Alabama Resource Management System

Enterprise GIS in Health and Human Services

A project of the Alabama Children's Policy Council and the Department of Children's Affairs. Supported by the US Space and Rocket Center, SICS Consulting, and Teledyne Solutions.

Connecting decision makers with the information they need to strengthen our children and families

ARMS Model



ARMS Audience

Non-GIS, Non-IT, Non-Technical, Non-Statisticians

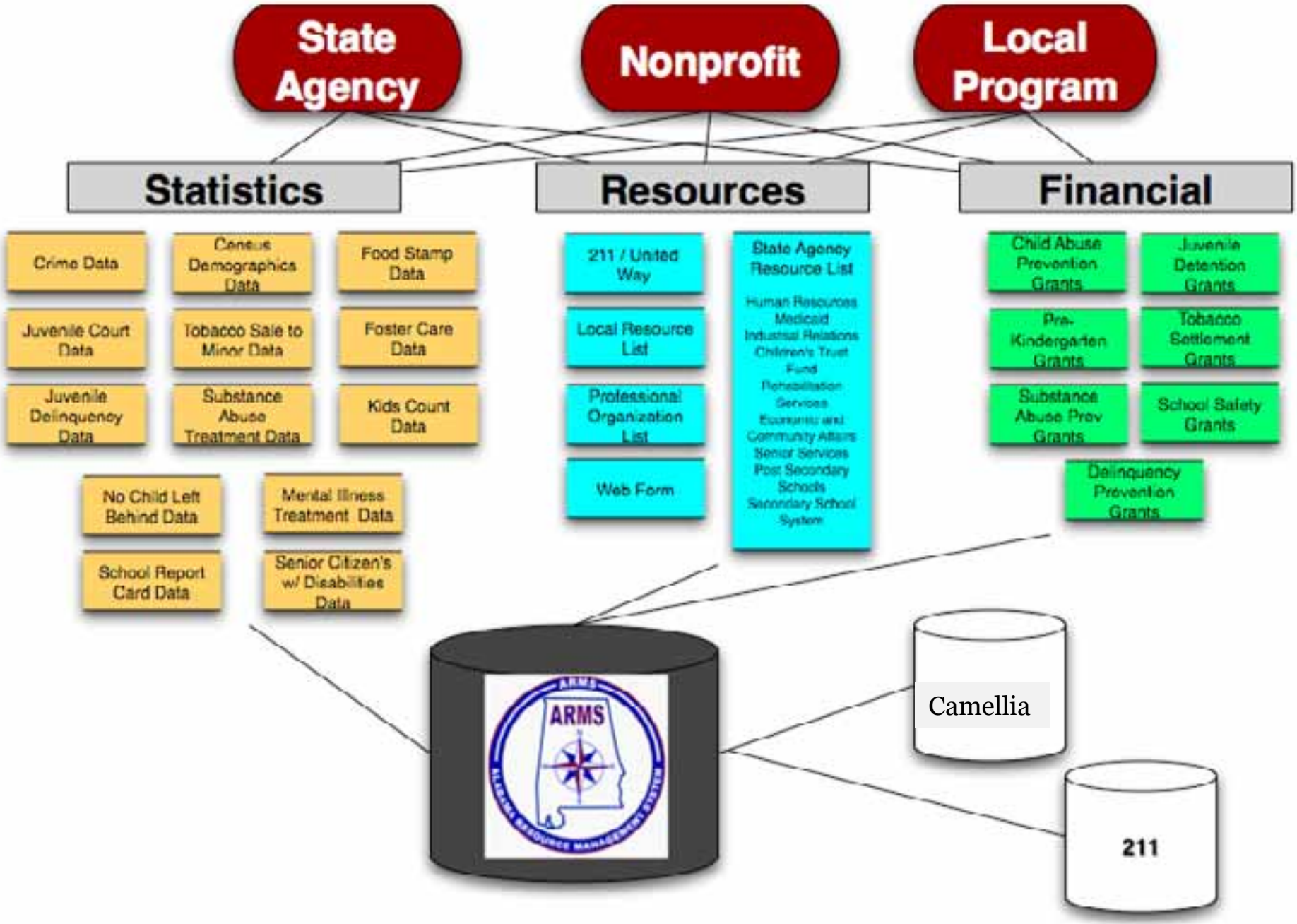
Juvenile Judges
Child Welfare Programs
Public Health Agencies
After School Programs
Tutoring Programs
Child Abuse Prevention Programs
Substance Abuse Programs
Mental Health Programs
Pre-K Programs
Child Care Programs
Child Advocates
Community Foundations
Legislators
Governor
State Agencies
Police
County Commissions
Schools
Etc.....

What do we share?

- Statistics
  - Population Demographics
  - Program Usage Data
  - Vital Statistics
  - Crime Data
  - Sales, collection, etc
- Resources
  - Where services are located (federal, state, local)
- Funding
  - Federal, State, and Private grants

Guiding Principals

- Data Sources own the data
  - Decide **what** is seen
  - Decide **who** sees it
  - Decides **how** it is seen
- Able to manage internal and external audiences
- Planning and Analysis, Not Case Management
- ARMS stores and displays data and the user interprets


State Agency
Nonprofit
Local Program
Statistics
Resources
Financial
Crime Data
Census Demographics Data
Food Stamp Data
Juvenile Court Data
Tobacco Sale to Minor Data
Foster Care Data
Juvenile Delinquency Data
Substance Abuse Treatment Data
Kids Count Data
No Child Left Behind Data
Mental Illness Treatment Data
School Report Card Data
Senior Citizen's w/ Disabilities Data
211 / United Way
Local Resource List
Professional Organization List
Web Form
State Agency Resource List
Human Resources
Medicaid
Industrial Relations
Children's Trust Fund
Rehabilitation Services
Economic and Community Affairs
Senior Services
Post Secondary Schools
Secondary School System
Child Abuse Prevention Grants
Juvenile Detention Grants
Pre-Kindergarten Grants
Tobacco Settlement Grants
Substance Abuse Prev Grants
School Safety Grants
Delinquency Prevention Grants
ARMS
Camellia
211

Inputs

ID	JuvenileID	ComplaintID	SiteNum	CountyName	JuvenileZipCode	JuvenileSex	JuvenileRace	AgeAtOffense	ComplaintDate	PetitionDate	DispositionDate	FilingCharge	DispositionCharge	DispositionChargeCategory	DispositionChargeClass	DispositionChargeType	AdjudicationCode
18543	2799534	979799	04	Autauga	36067	Female	Black	5	09-Aug-05	10-Aug-05	26-Sep-05	CUSTODY PETITION	CUSTODY PETITION	Juvenile	M	Other	Dependant
18588	2711139	954354	04	Autauga	36066	Female	White	2	05-Apr-05	05-Apr-05	12-Jul-05	CUSTODY PETITION	CUSTODY PETITION	Juvenile	M	Other	Dependant
18536	2732450	962071	04	Autauga	36022	Male	White	17	04-May-05	04-May-05	22-Sep-05	HARASSMENT	HARASSMENT	Personal	C	Misdemeanor	None
18537	2755796	965194	04	Autauga	36067	Male	Black	13	18-May-05	18-May-05	23-Jun-05	CUSTODY PETITION	CUSTODY PETITION	Juvenile	M	Other	Dependant
18538	2771194	970289	04	Autauga	36067	Male	Black	9	15-Jun-05	16-Jun-05	03-Aug-05	CUSTODY PETITION	CUSTODY PETITION	Juvenile	M	Other	Dependant
18539	2778864	972964	04	Autauga	36022	Male	White	8	29-Jun-05	30-Jun-05	22-Jul-05	CUSTODY PETITION	CUSTODY PETITION	Juvenile	M	Other	Dependant

Client

Summarized

Web Service

County	Zipcode	All Cases	Actives	Closed	Applicants
01	06051	1	0	1	0
01	30120	1	0	1	0
01	30331	1	0	1	0
01	30813	1	0	1	0
01	31088	1	0	1	0
01	31904	1	0	1	0

Outputs (User Hierarchy)

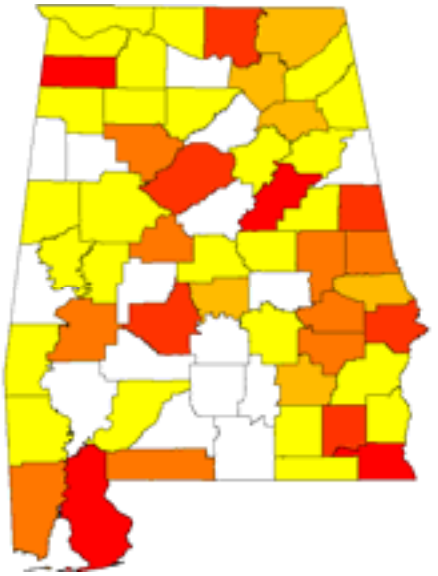
- Dynamic Reports
- Point and Click Maps (IMS, VE, Google)
- Server Web Application
  - Multiple Layers
  - Zoom In and Out
  - Spatial Joins
  - Radius Summaries and Buffers
  - Very Detailed Data
- ArcGIS Explorer
  - Connect to ARMS Maps and Data
  - More Task and Models
  - Confidential Street Level Databases
  - Connect to Other Services
  - Add Local Data
- ArcReader
- ArcView

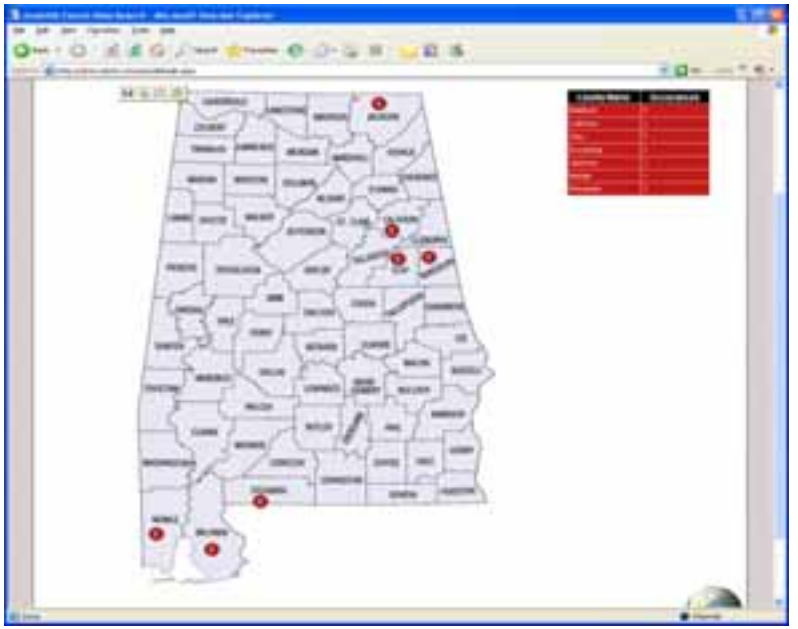
Reports

- Community Assessment
- Grant Administration
- Child Stat

Point And Click

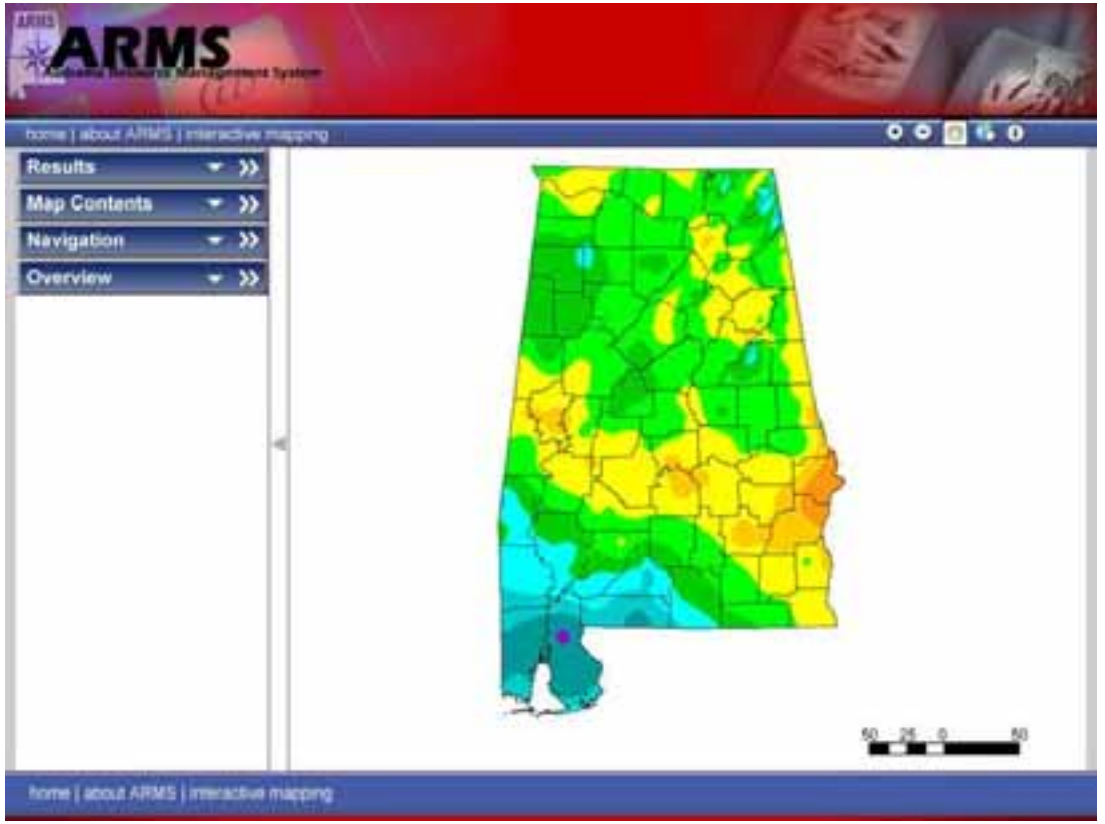
- Most popular request
- Information partners want to highlight
- Simple to use





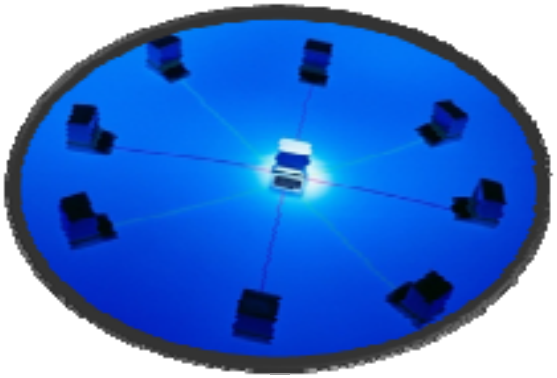
Existing Model

- Basic and detailed data
- See multiple layers
- Identification
- Analysis
- Community level



Explorer

- Greater analysis
- Confidential data
- Other data sources
- Add user own data



Data Sharing

- Share ARMS data with agencies with GIS capabilities
- Share data to researchers with data provider's permission
- Share resource data


ARMS
ARMS
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ALABAMA RESOURCE MANAGEMENT SYSTEM

Hippocrates
New Jersey's Health System Situational Awareness Application

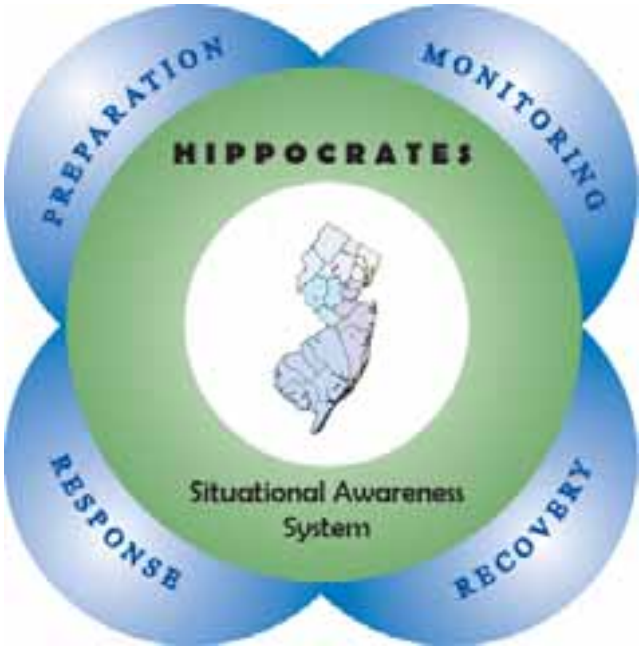
ESRI Lighthouse Moments

October, 2007

Jon S. Corzine
Governor

NEW JERSEY DEPARTMENT of HEALTH and SENIOR SERVICES

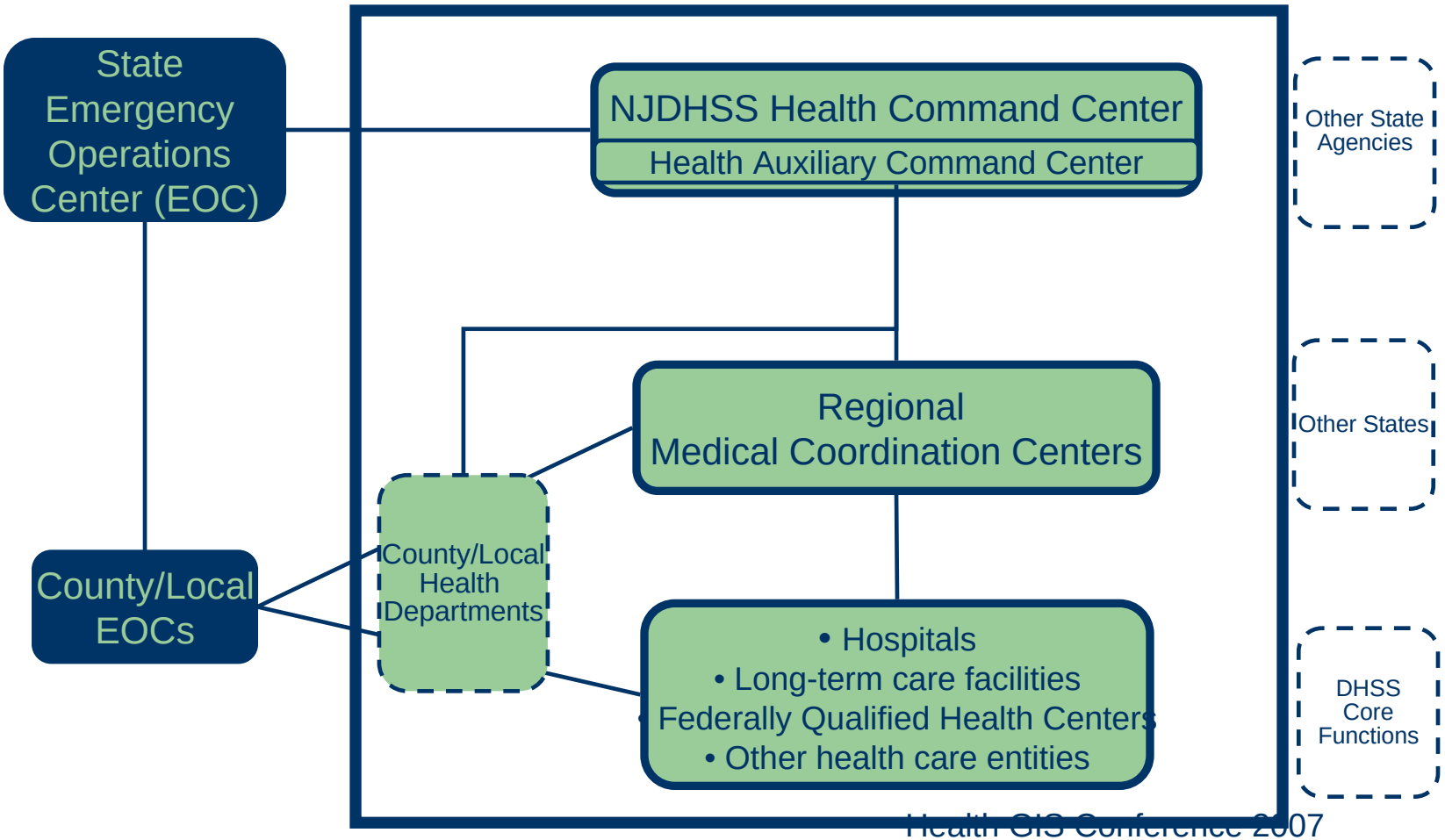
Fred M. Jacobs, M.D., J.D.
Commissioner



New Jersey's Health System

- 8.7 million people
- 566 municipalities
- 114 local health departments
- 21 counties
- 22 lead health agencies
- 5 planning regions
- 81 acute care hospitals
- 9 Medical Coordination Centers
- 1 Health Command Center

New Jersey's Health Response System



What is Hippocrates?

- **Situational awareness** application for routine and emergency use, and, routine data storage/analysis
- Integrated, **web-based** application suite accessible anywhere, anytime
- **One-stop shopping** for health infrastructure preparedness and emergency response information
- Displays real-time data crucial for **informed decision-making** during a health emergency
- **Customizes access** on an individual or group

Application Development

- Initiated development in 2003
- Piloted during TOPOFF 3 in April 2005
  - Identified additional requirements
    - **Seamless integration** of additional health applications
    - **Increased map area**
    - **New functions** such as search
    - **Bi-directional** Email communication and document sharing
    - **Additional reporting** and summary statistics
    - New opportunities for **advanced analysis**
- Refined Version 1.0 requirements in Fall 2005
- DHSS Testing in Summer 2006
- Preliminary operational use (DHSS only) Winter 2006
- Training first part of 2007
- Phase 1 roll-out Summer – Winter 2007

Dynamic Data Integration

HIPPOCRATES

HEALTH LAYERS

- Advanced and Basic Life Support
- Acute and Non-Acute Care Hospitals
- Points of Distribution
- Blood Banks
- RSS Medical Stockpile Locations
- Health Departments
- Hospitals from Surrounding States
- Long Term Care
- Command Centers

BASE MAP LAYERS

- Post Offices
- Schools
- Roads
- Municipalities
- Counties
- Surrounding State Counties

REAL-TIME FEEDS

- Incidents
- Events
- Weather/Traffic
- Medical Stockpile
- SitStat Surveys
- Hospital Divert Status
- Ambulance Locations

Application Modules

- Interactive Mapping
- Command Center Console
- Healthcare System Resources
- Communication Channels
- Burn
- Poison Center

Hippocrates Users

- NJ Department of Health & Senior Services
  - State Health Command Center (HCC)
  - Regional Medical Coordination Centers (MCCs)
- Acute Care Facilities & Healthcare Systems
- County/City Health Departments
- State Emergency Operations Ctr
- Federal agencies (e.g. USDHHS Region II)
- External partners (e.g. New Jersey Hospital Association)
- Other States

Lessons Learned

- Consensus does not always equal progress
  (incident vs. event/now have Advisory Committee)
- Plan for the end from the beginning
  (desktop support/help desk/project expansion)
- Build and they will come - but only if it’s good
  (NJ DHS/Fire Service/other states)
- Multi-use is key to survival
  (other than emergency preparedness functionality)

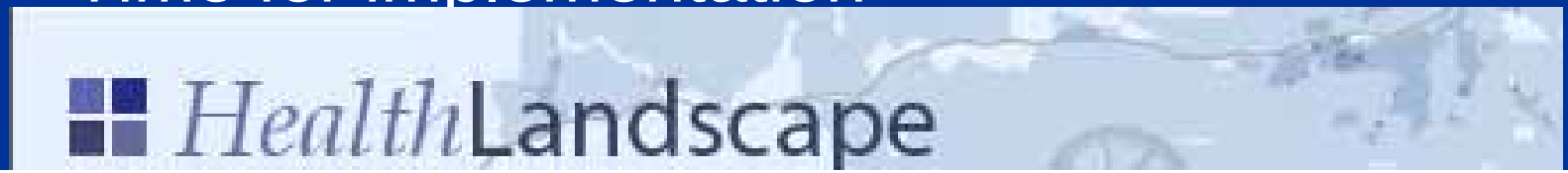
Moving Forward

- NJ Roll-out
- Out of State pilot
- Phase II Development
  - New modules/capabilities
  - Upgrade of current modules
- Transition to GIS Server (required by NJ OIT)
  - Geographic web editing-enter info about a point/area impacted
  - Health evacuation assessments: Flood inundation - potential extent of flooding creates polygon-see potential road closures

Introducing
www.*Health*Landscape.org

Problem

- Utility of GIS in health is well-established
- However, broad adoption has been limited, particularly in the physician community and non-profit health and social service agencies
- Barriers include:
  - Cost
  - Expertise - Learning curve for technology
  - Centralized data
  - Time for implementation



Purpose

- *To build* an interactive web atlas that allows health professionals, policy makers, academic researchers and planners to combine, analyze and display information in ways that promote understanding and improvement of health and healthcare

- *To offer* select users the capacity to upload, geocode and map their own data. Once converted, these data would be shared with the *Health*Landscape community or securely stored for limited user access

Implementation Process

January 2006

January 2007

January 2008

Initial Site Design and Development

Alpha-Testing

Beta-Testing

Business Plan Development

Soft Launch of the Site

Version 1.1 Development

Targeted Marketing

Focused Data Gathering

Continuous Upgrades and improvements

HealthLandscape

http://www.healthlandscape.org/index.cfm

Go | Bookmarks | Check | AutoLink | AutoFill | Send to | Search Web | Mail | My Yahoo! | Fantasy Sports | Football | Games | Music | Answers | Personals | Add Tab | Search Products | Search Google | Shop Online | Specials | Upromise Savings: $9.14

HealthLandscape

home | getting started | articles | about us | log out

me: Shiloh Turner [Upgrade] My Recent Projects...

Community HealthView

Map My Community's Health

Community HealthView gives researchers and policymakers the ability to create custom maps and tables of health in their communities - depicting populations at risk, health outcomes, and the distribution of health interventions. It currently houses health-related data from Greater Cincinnati, the State of Ohio, and the nation.

Primary Care Atlas

Make Primary Care Maps

The Primary Care Atlas maps Health Professional Shortage Areas (HPSAs), Medicare Physician Scarcity Areas (PSAs), the impact of your residency program graduates on your region, the distribution of physicians by specialty (primary care and other), and populations.

My HealthLandscape

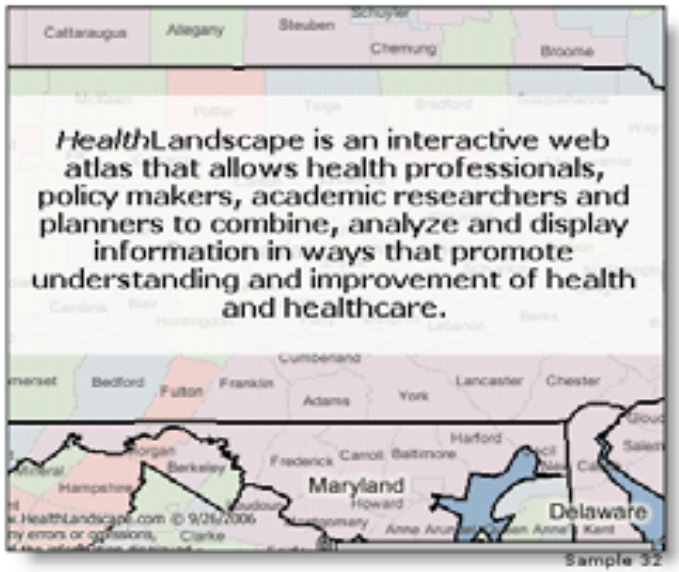
Map My HealthLandscape

My HealthLandscape is a secure environment for users to upload and geocode their own health-relevant data, display that information with key population, demographic, and economic indicators, and collaborate with others in their organization to create a myriad of informative visual displays.

Health Center Mapping Tool

Map My Health Center

The Health Center Mapping Tool turns your Community Health Center or clinic's data into maps of the patients you serve, the core neighborhoods that comprise your service area, and areas with the densest concentrations of your patients. Also, map U.S. Census data to find populations of interest to you.



Sample 32

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American Academy of Family Physicians | The Robert Graham Center | The Health Foundation of Greater Cincinnati | University of Cincinnati

Internet

Yahoo! Messenger | Inbox - Microsoft Out... | Microsoft PowerPoint ... | HealthLandscape - Mi...

Lessons Learned

- Pooling our funds allowed us to build a more dynamic system
- Partnerships are complex relationships that need strong ongoing communication
- Build on strengths of one another

Next Steps

- Targeted Marketing
  - Develop relationships with data producers, data users, and potential funders
- Gather wide-ranging, relevant data sources
- Continuous site upgrades and improvement

www.healthlandscape.org

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