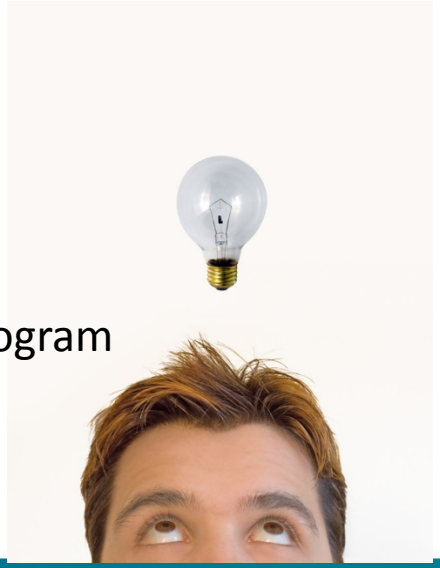
Leveraging Immunization Data for Public Health Analytics and Data Visualizations:

Experiences and Lessons from Implementing a Tool For Louisiana's Immunizations Program



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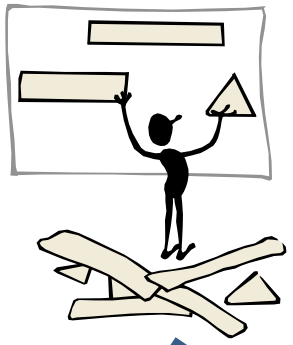
Talk outline

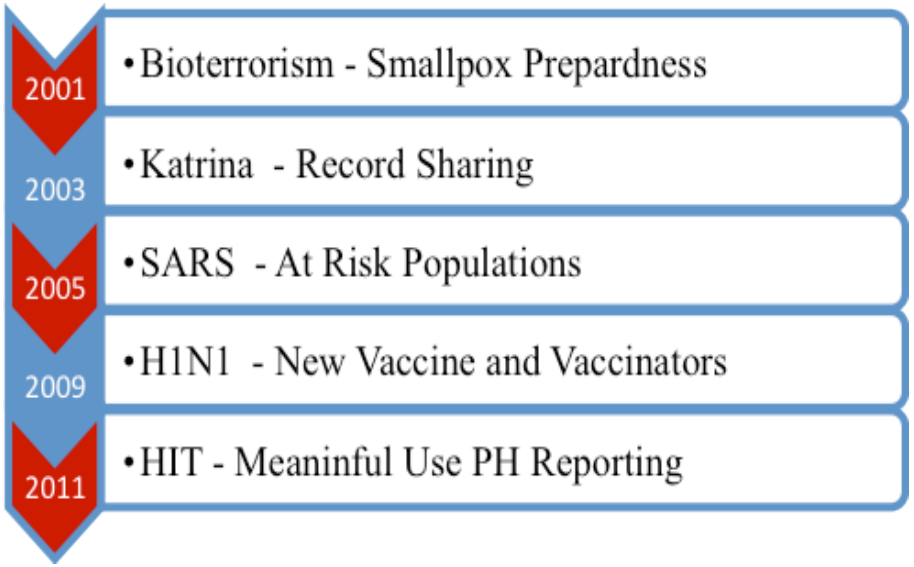
- Evolution
  - What led LA's program to implement an analytics tool.
- Planning
  - Major steps involved in the actual implementation
- Scope
  - Staying focused
  - How LA chose metrics
- Content
  - How LA chose to organize their data in the analytics tool.
  - What to include in ad-hoc visualizations
- Challenges
  - What we had to overcome to make it happen
- Acknowledgements and Questions!



Data Analytics tools

- *Analytics is the process of obtaining an optimal and realistic decision based on existing data.*

- Designed to provide on-the-fly information to inform decision-makers.



- Many public health applications for these tools
  - » some translations required for implementation.

Evolution

- Louisiana's Goals for a Healthy Population
- 4.3 million, ranked 49th of 50 states.
- Cancer, obesity, cardiovascular disease, mental health. HIV/AIDS, infant mortality
- Immunizations important, and align with healthy babies goals.
  - Immunization rates compare well to nation
  - Challenge is to make evidence-based decisions to improve coverage and monitor vaccine use.

Louisiana's challenge

- Vast amounts of data
  - » Multiple databases (IIS is 1 of many in DHHS)
  - » On-the-fly analyses
  - » Integrate information from multiple databases.
- Speed of data acquisition
  - » e.g. electronic messaging
  - » quality of that data?

- Need a divergence from traditional reporting
  - » preemptive interventions
  - » Evidence-based decision-making

Planning

- Major steps in implementation

1. Identify the program's needs and how they envision the system will meet these.
2. Identify who will use the system
3. Choose technology platform best fitting for scope of use and to meet needs.
4. Choose appropriate BI tool.

Continued…

Planning

5. Define specific content that will be displayed using the BI tool identified.
6. Identify data source(s) needed
7. Build underlying data model for the UI
8. Identify data hierarchies: drill-downs.
9. Identify variable relationships: ad-hoc slicing of data.
10. Build the user interface.
11. QA and deploy (current status).

Scope

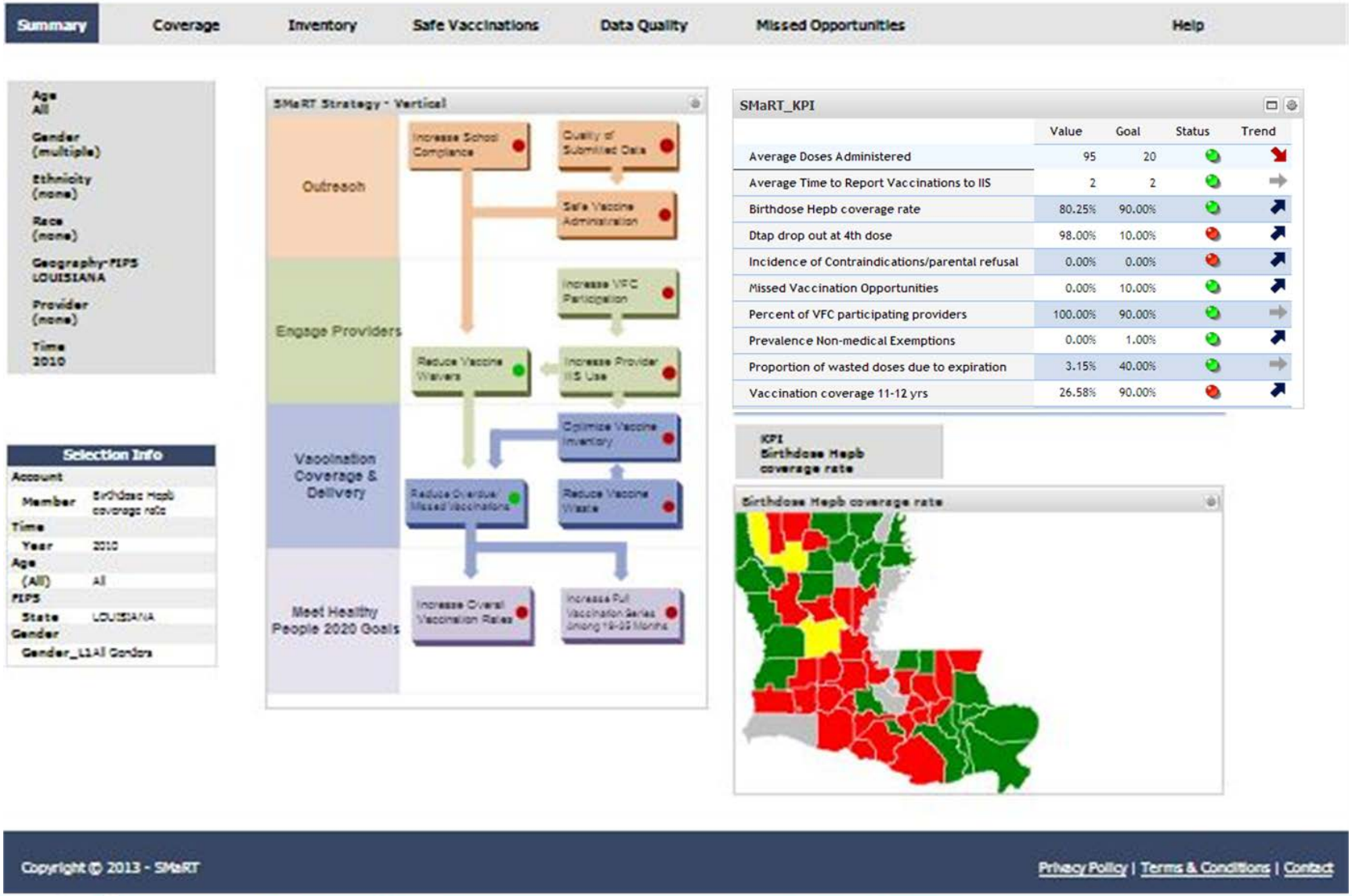
- Challenge: keep focused on program's priorities, but don't leave out anything important.
- Identified 5 main themes in data needs:
  - Coverage rates
  - Vaccine inventories
  - Data quality
  - Vaccination safety
  - Missed opportunities

Scope

- Solution: A single overview page was needed to help direct users to areas of program needing attention.
  - The “story” (summary) is told using 3 elements:
    - Strategy Map
    - Geographic Map
    - Key Performance Indicators

Content

Needed a summary page at log in (a bird's eye view suggests where to look next)



Content

- Building out ad-hoc analysis-capable visualizations
  - Chose visualizations that fell within the 5 themes.
    - Coverage rates
    - Vaccine inventories
    - Data quality
    - Vaccination safety
    - Missed opportunities

Content


Summary
Coverage
Inventory
Safe Vaccinations
Data Quality
Missed Opportunities
Help
Age
All
Ethnicity
(none)
Gender
All Genders
Geography-FIPS
ASCENSION
Geography
LOUISIANA
Provider Administered
All
Vaccine
All
Time
2010
Coverage By Vaccine
Coverage By Vaccine Family
Percent Covered
Vaccine Family
Coverage Over Time
Coverage Over Time
SMaRT Map
Selection Info
Gender
Gender_L1 All Genders
Age
(All) All
Geography
State LOUISIANA
EntityAdministered
(All) All
Time
Year 2010
Vaccine
(All) All
FIPS
County ASCENSION
Waivers by Vaccine
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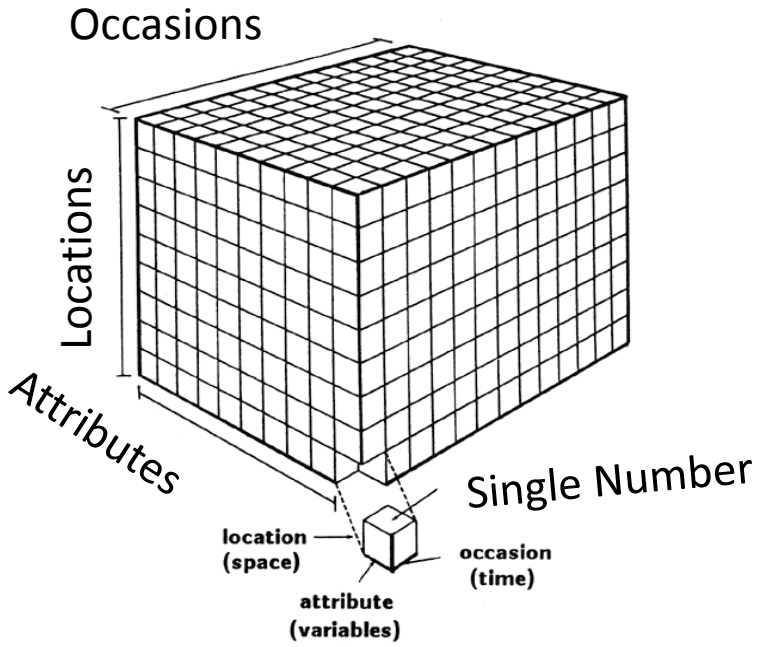
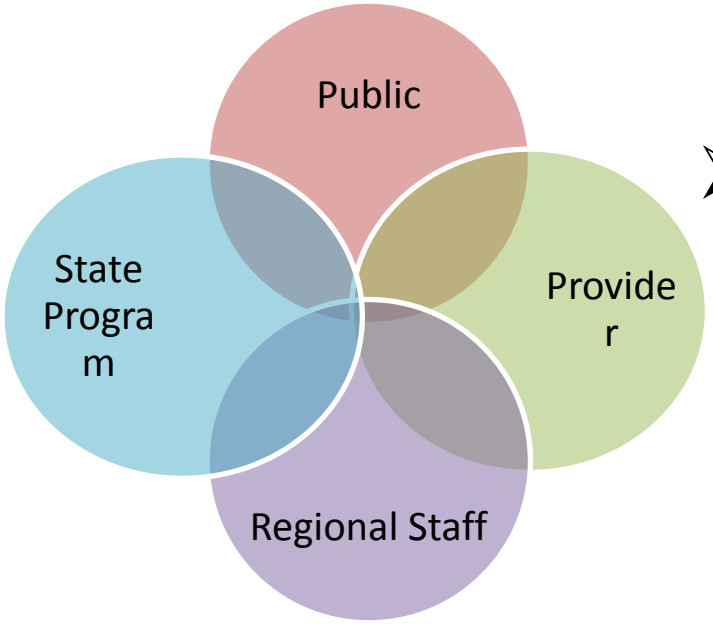
Challenges

- Complexity of immunization data.
- Staying focused on informative metrics (avoiding information overload).
- Choosing the right metrics.
- Security of system and data.
- Dealing with different users and varying viewing privileges.

Challenges

- Dealing with potentially huge numbers of users all working in the system at once.
  - » Don't put demand in the IIS
  - » Pull data from a central data 'cube'
  - » In the cloud





- Varying levels of data access
  - » We needed to protect visibility of information based on user's role.

Acknowledgements

Acknowledgements
- Louisiana Immunizations Program
- http://dhh.louisiana.gov/index.cfm/page/547
- Scientific Technologies Corporation
- http://stchome.com
- DSPanel
- http://www.dspanel.com/
- AIRA

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- [1]Louisiana State Health Equity Report http://new.dhh.louisiana.gov/assets/docs/GovCouncil/MinHealth/2008_HealthDisparitiesReport.pdf
- [2]2012 America's Health Ranking report http://www.americashealthrankings.org/LA

Thank you! Any Questions?

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