

# Planning for Change: Technology Assessment of Rhode Island's KIDSNET

National Immunization Conference  
Chicago, IL  
March 17, 2003

Noam H. Arzt, Ph.D.  
President, HLN Consulting, LLC

Amy Zimmerman, MPH  
Chief Children's Preventive Services  
Rhode Island Department of Health

## The KIDSNET Concept:

- Assure all RI children receive comprehensive screening and follow-up for preventive services
- Public health computerized information management and follow-up system that tracks children's preventive health services
- Links health and service care providers to Department of Health
- Promotes sharing of information between providers
- Promotes comprehensive contacts with families



# KIDSNET Affiliated Programs

## 6 Universal:

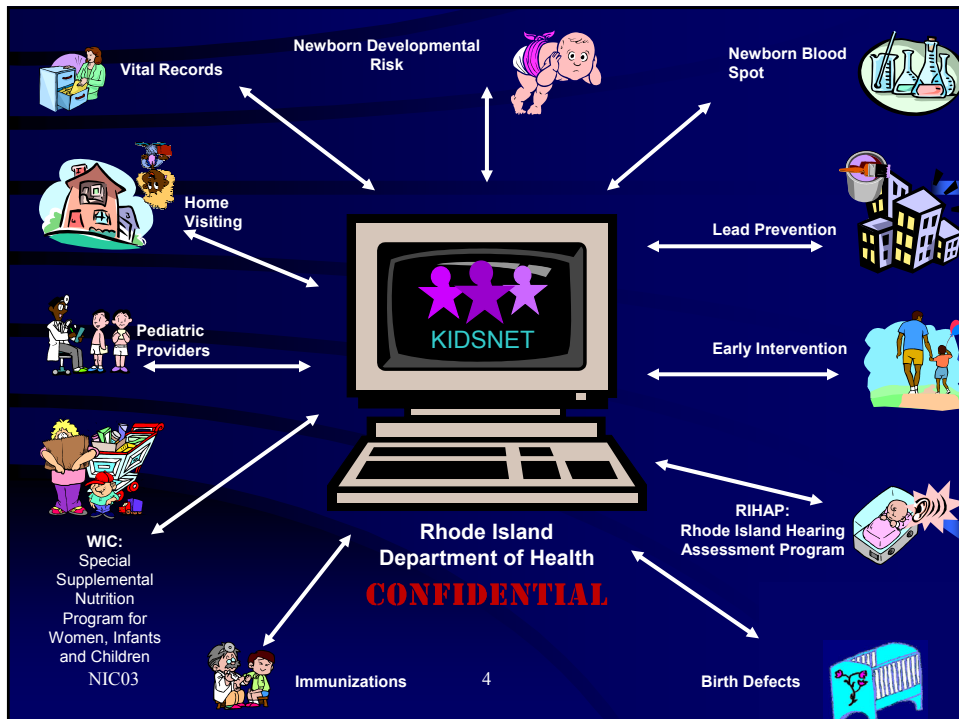
- Newborn Developmental Risk
- Newborn Bloodspot Screening
- Newborn Hearing Assessment
- Immunization
- Childhood Lead Poisoning
- Vital Records

## 4 Targeted:

- WIC
- Early Intervention
- Family Outreach (Home Visiting)
- Birth Defects

NIC03

3



## System Features and Design

- Records initiated at birth
- Includes all RI births from Jan 1, 1997 (84,000 children)
- Remote online access by users - older technology
- Data Capture: Only immunization data comes directly from providers

NIC03

5



## Follow-up/Outreach Features

- Generates well child reminders
- Generates recall letters (lead)
- Provider monthly feedback reports
  - Lead screening
  - Immunizations
- Home Visiting/Risk Response Program

NIC03

6



## Who uses KIDSNET?

### Current Users:

- Health department staff
- Health care providers
- Contracted home visiting agencies
- Headstart Agencies

### Potential New Users (requesting access):

- Audiologists
- MCO's
- School Nurse Teachers
- Other Community Based Organizations

NIC03

7



## Progress to Date

- 50% of Primary Care Provider sites are operational
- 70% of children in KIDSNET have some immunization history (beyond Hep B at birth)

NIC03

8



## Ongoing Challenges

- KIDSNET is terminal based and antiquated technically
- Users find the system difficult to use – their standard is graphical user interface
- Matching and de-duplication
- Chronic problem of “double data entry” – billing system extracts have been problematic from a data quality standpoint
- Difficult to run ad hoc reports

NIC03

9



## Project Objectives

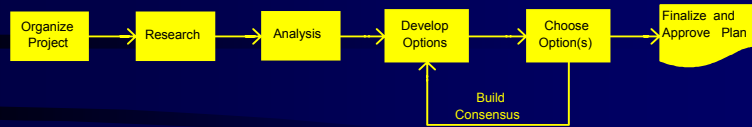
- Identify an updated architecture for the registry product that modernizes it and makes it more user-friendly
- Identify strategies to match and de-duplicate records as part of the larger integrated system
- Define appropriate strategies for data capture for this system

NIC03

10



# Project Plan



- Traditional analytical approach
- Centered around three visits which triggered off-site research agenda
- Conducted survey of all pediatric practices
- Met with many different stakeholders
- Project website for collaboration
- Limited budget

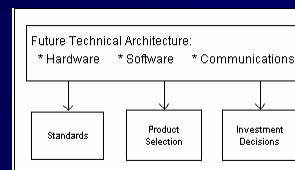
NIC03

11



# Underlying Methodology

- Technical Architecture Development



Methodology guides research in four areas:

- Documentation and validation of functional requirements
- Development of IT “principles”
- Documentation of current architecture
- Research of selected industry trends

NIC03

12



## Project Activities: Visits

- First Visit: March 2002
  - System overview; system demonstration; technical discussion; review of other initiatives
- Second Visit: April 2002
  - Stakeholder meetings (affiliated programs; KIDSNET staff; senior management)
- Third Visit: June 2002
  - Present survey results; review strategic options

NIC03

13



## Project Activities: Deliverables

- Detailed meeting notes
- Current Architecture diagram
- Draft principles – vetted with senior management group and revised
- Online, web-based survey with written analysis and analytical website
- Research notes: bar coding; HIPAA; de-duplication
- Strategic technology options
- Selected Option “Work plan elements”

NIC03

14



## Survey Results

- 87 of 148 practices responded (25% via web)
- High interest in participating
- Concerns about cost and confidentiality
- 89% had at least one computer
- 74% had web access (those without are equally interested in participating)
- 38% using handhelds (mostly doctors)

NIC03

15



## Strategic Technology Options

Four options:

- #1: Stay the Course
- #2: Series of Marginal Improvements
- #3: Commercial Off-the-shelf Replacement
- #4: Complete System Re-write

NIC03

16





# Strategic Technology Options

## Option #1: Stay the Course

### Strengths

Allows time for state-wide architectures and strategies to develop more fully  
Allows more time for emerging technologies to mature  
Allows more time for NEDSS and HAN strategies to develop

### Weaknesses

Loss of staff *and* provider enthusiasm  
Continuing buildup of new records held in suspense  
KIDSNET processes may not be HIPAA compliant.

NIC03

17



# Strategic Technology Options

## Option #2: Series of Marginal Improvements

### Strengths

Incremental improvement consistent with KIDSNET goals.  
Many strategies can be implemented independent of one another.  
Moves key provider functions to the web quickly.  
Does not require detailed, multi-program requirements analysis and discussion at this time.  
Preserves the solid technical and functional foundation of KIDSNET.

### Weaknesses

Strategies fall short of complete web enablement of current KIDSNET application screens.  
Funding requirement still substantial (@\$250,000)

NIC03

18



# Strategic Technology Options

## Option #3: COTS Replacement

### Strengths

Resulting application is a fully web-enabled product for all KIDSNET functions.  
Quicker to implement than other options.

### Weaknesses

KIDSNET will have to accept the business process implementation of the selected package.  
Funding requirement still substantial (>\$500,000)  
May require replacement of some components of KIDSNET that are considered successful and desirable.  
Substantial customization of packaged application required to accommodate KIDSNET data set and system interfaces.

NIC03

19



# Strategic Technology Options

## Option #4: System Re-write

### Strengths

Preserves as much of the technical and functional foundation of the existing KIDSNET system as the analytical stage determines.  
Resulting system will come closest to meeting negotiated requirements of KIDSNET programs.

### Weaknesses

Requires a detailed, multi-program requirements analysis.  
Will take the longest to implement.  
Funding requirement still substantial (@\$500,000- \$1 million+).  
Possible loss of user enthusiasm.  
Continuing buildup of new records held in suspense.

NIC03

20



## Plans for Technology Improvements: Option #2

- Create web application for accessing data (patient and practice reports)
- Improve matching and de-duplication, create a merge tool, allow online adds
- Develop/pilot PDA data collection tool
- Implement ad hoc query reporting tool
- Improve scanning capabilities

NIC03

21



## Contact Information

Amy Zimmerman, MPH  
Rhode Island Department of Health  
401-222-5942  
[amyz@doh.state.ri.us](mailto:amyz@doh.state.ri.us)

Noam H. Arzt, PhD  
President, HLN Consulting, LCC  
858-538-2220  
[arzt@hln.com](mailto:arzt@hln.com)

NIC03

22

