Technology Assessment: Moving Rhode Island's KIDNET Forward

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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
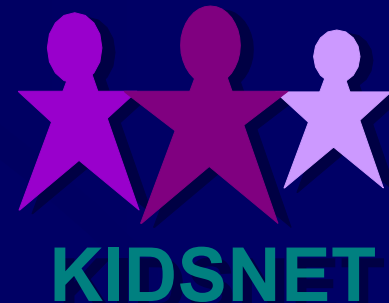- Promotes comprehensive contacts with families

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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
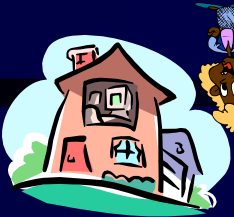- Family Outreach (Home Visiting)
- Birth Defects

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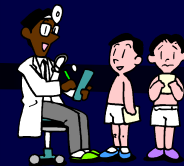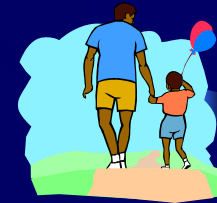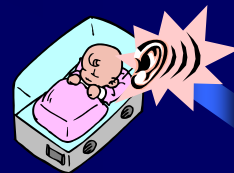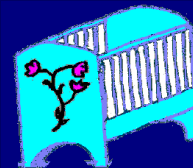# System Features and Design

- 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

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Follow-up/Outreach Features

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

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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

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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)

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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

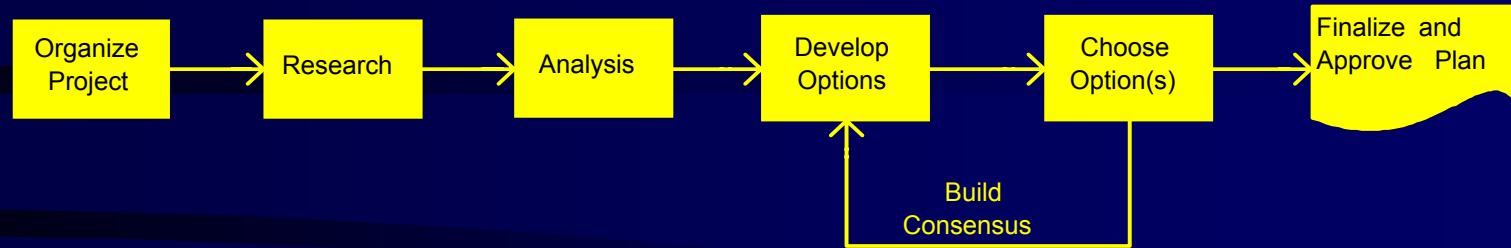- Difficult to run ad hoc reports

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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

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Project Plan

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┌──────────┐    ┌──────────┐   ┌──────────┐   ┌──────────┐   ┌──────────┐   ┌──────────┐
│ Organize │ →  │ Research │ → │ Analysis │ → │ Develop  │ → │ Choose   │ → │ Finalize │
│ Project  │    │          │   │          │   │ Options  │   │ Option(s)│   │ and      │
└──────────┘    └──────────┘   └──────────┘   └──────────┘   └──────────┘   │ Approve  │
                                                   ↑                        │ Plan     │
                                                   │        ┌──────────┐    └──────────┘
                                                   └────────┤  Build   ├────────┘
                                                            │ Consensus│
                                                            └──────────┘
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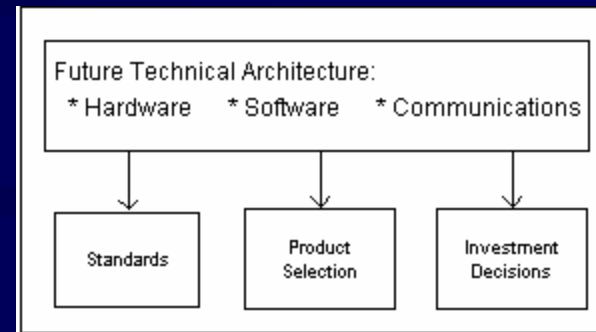
- Traditional analytical approach
- Centered around three visits which triggered off-site research agenda
- Conducted survey of all pediatric practices
- Met with many different stakeholders
- Project website for collaboration
- Limited budget

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Underlying Methodology

- Technical Architecture Development

Future Technical Architecture:
* Hardware   * Software   * Communications

Standards   Product Selection   Investment Decisions

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

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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

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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"

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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)

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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

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Strategic Technology Options

Option #1: Stay the Course

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

Strategic Technology Options

Option #2: Series of Marginal Improvements

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

Strategic Technology Options

Option #3: COTS Replacement

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

Strategic Technology Options

Option #4: System Re-write

Strengths	Weaknesses
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.	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.

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

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