

# Community Health Program Monitoring and Evaluation Through the Internet

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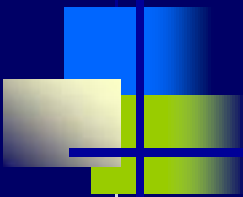
# Introduction

- Internet technology and management information systems are frequently used in health promotion activities and health assessment in individual worksite, school, or clinic settings,
- However, their use in community settings for program monitoring and evaluation is much less common.
- The purpose of this presentation is to examine the process and technology used in an internet-based application (PMDES) intended for monitoring, data collection, and evaluation of a large scale health promotion program in New York State.



# Evaluation of Social Programs

- In the last few decades, program evaluation has gained prominent position as a key component of public health research.
- Social programs have become increasingly complex with multiple intervention sites, multiple intervention levels, and multiple audiences.
- In response, program evaluation theory, intervention designs, and methods have improved to reflect these changes.



# Public Health Research and Program Evaluation

- According to the Centers for Disease Control, program evaluation involves useful, ethical, feasible, and accurate procedures that help improve and account for public health actions
- Through successful evaluation procedures, health program managers can make decisions on:
  - the best use of time and resources
  - determining if the program is achieving its stated goals
  - demonstrating the effectiveness of a program to funders and other stakeholder groups



# GPRA

- Government Performance and Results Act (GPRA) has also contributed to the proliferation of community health program evaluation efforts with its requirement that agencies set performance targets and track their progress against these benchmarks.
- It is surprising that despite all the importance that computer and internet technology play in the 21st century, examples of internet based data collection tools and monitoring systems are only occasionally mentioned in the evaluation of community health programs.



# Standard Practice

- At its best, the use of technology by large scale community health programs for data collection consists of electronic compilation of data on individual PCs, either in a template in Excel, Access, or in another data base program.
- Each project site then transfers their data to a central administration office through e-mail.
- This process is not only inefficient and time consuming, but also generates less than reliable and consistent data.
- Individual projects that submit the data ordinarily do not have access to the data submitted by other projects or have the ability to retrieve and edit their own data.
- Any modifications or updates to the system would require dissemination of new software and training.



# NYS Healthy Heart Program



- For more than 20 years, the NYS Healthy Heart Program has promoted the heart health of residents
- Primary attention is given to making it easier for New Yorkers to eat well, be active and be tobacco-free
- Funds are provided to local communities to conduct physical activity and nutrition interventions in schools, worksites and the community, and to ensure people receive appropriate health care for risk factors for cardiovascular disease.
- Currently, 26 sites in 55 counties administer projects



# NYS Health Heart Program



- Local Healthy Heart programs involve more than 1, 000 organizations in wellness- related activities.
- County health departments, educational institutions, community- based organizations, wellness councils and faith- based organizations lead this work.
- The local Healthy Heart programs have implemented many interventions to increase opportunities for physical activity and eating well.
- Some examples of 1500 successful community changes:
  - creating walking and bicycle trails
  - opening schools for physical activity use by residents before and after school hours
  - increasing physical activity options in after-school programs
  - producing radio and television shows on heart health
  - establishing and promoting farmers markets
  - changing menu selections in local restaurants





# Worksite Interventions



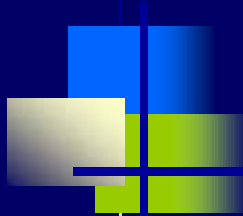
- HHP funds local agencies to conduct worksite wellness interventions across the state.
- Since it began addressing worksite wellness, the HHP has reached almost 300,000 employees in over 1,000 worksites.
- The funded agencies conduct surveys in worksites and then tailor interventions based on the results.
- The interventions create and modify policies, change the environment and provide services to help employees be more active and eat well.



# Environmental and Policy Changes

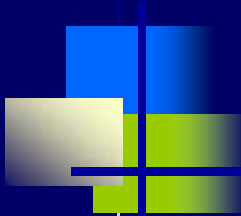


- Successful environmental and policy changes include:
  - new programs and facilities for physical activity during the workday (e. g., stretching class at lunch, exercise room on- site)
  - subsidies for health club membership
  - healthful food options in vending machines, cafeterias and at company events
  - walking groups
  - smoke-free environments
  - Farmers' markets at the worksite



# PMDES

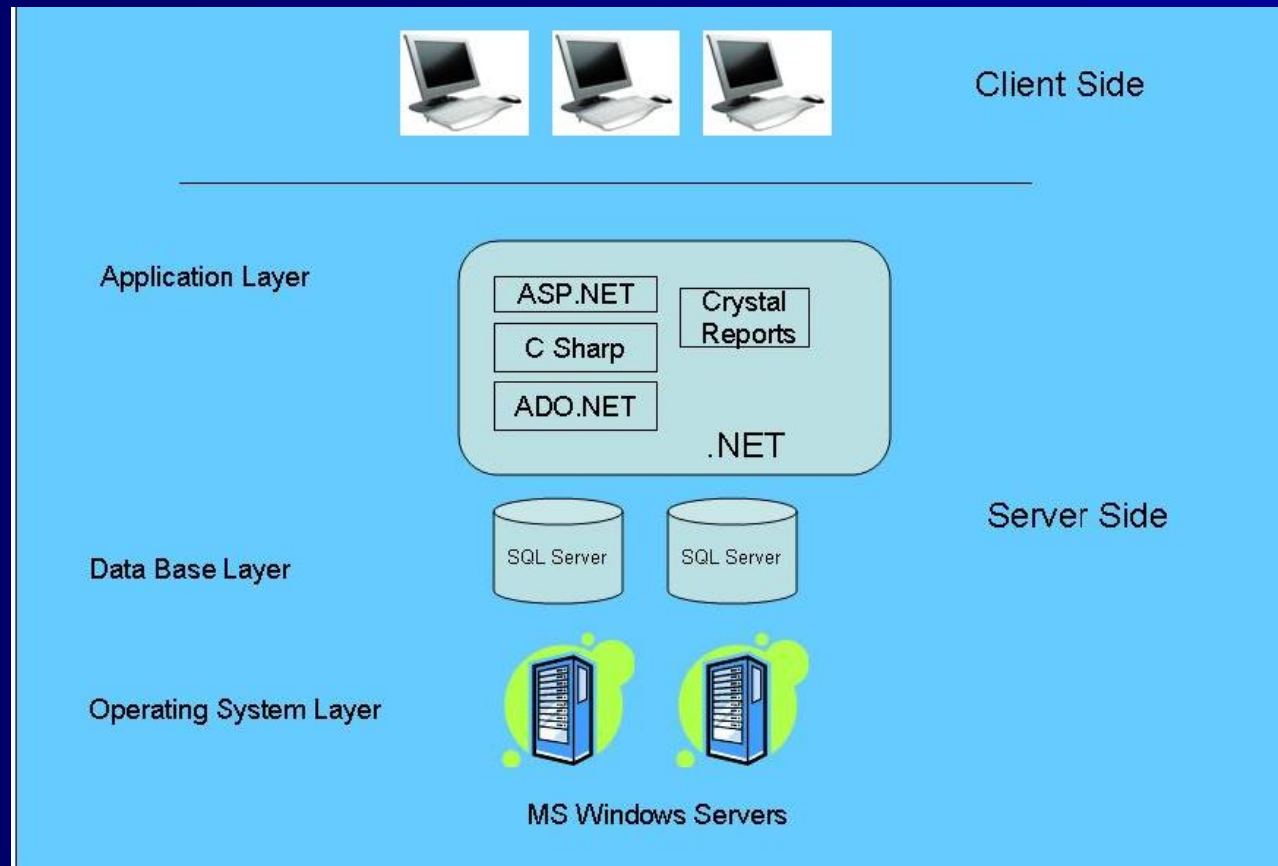
- To ensure that the monitoring and data collection system could capture the breadth and depth of local intervention projects, all stakeholders provided feedback on content through program managers at the central office.
- Hardware and software decisions were made on the basis of recommendations from the computing services of Binghamton University and the expertise of the technical team.
- For both systems, the initial prototype went through a number of transformations over a two year period. As the program managers and local project managers realized the possibilities with the systems, many components and additional functionalities were added.



# System Specifications

- Operating system:
  - Microsoft Windows Server with a backup Windows Server
- Data base:
  - SQL server
    - PMDES consists of 63 tables, 29 views and over 200 fields.
- Application:
  - .Net framework
    - Web forms, Xml, ADO.NET, ASP.NET
  - Crystal reports
  - C Sharp (C#) is used to maintain system functionality

# Technical Specifications

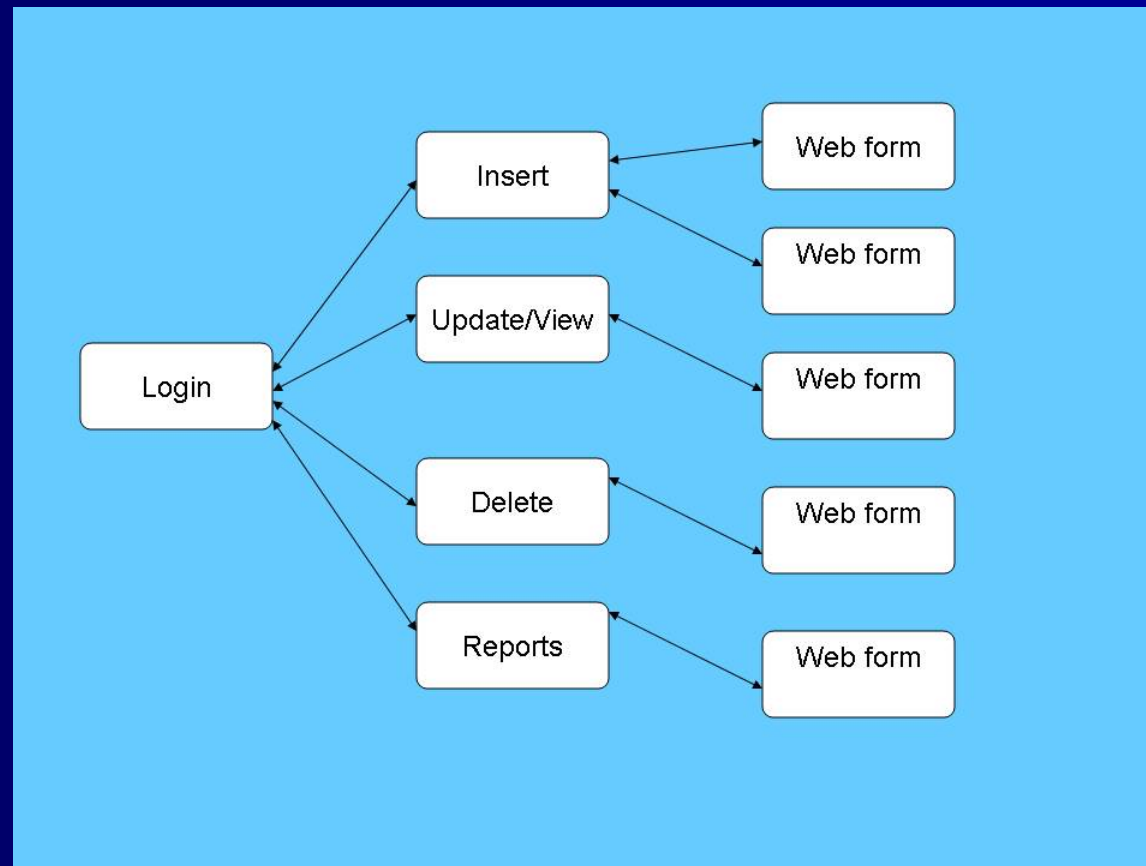




# User Interface

- Users log-on to the secure web site with their pre-assigned user id's and passwords.
  - All screens following the log-on process are customized for the specific user and project.
  - Since there are different types of roles among the clients, the system is able to recognize the user and his/her role and provide the functions that are appropriate for the specific user.
- Users can insert new data into the system or update previously entered data.
- Alternatively, they can view previously entered data or generate reports for their particular projects.
- The complexity of the interventions is evident in the number of web forms and reports created for the users.
- PMDES has over 104 web forms and 30 reports.

# User Interface Diagram



# An Example of Menu Options for Users

New York State Healthy Heart

Program Monitor Data Entry System (PMDES)

**BUILDING HEALTHY COMMUNITIES**

[Main Menu](#)

Welcome, Elaine Troy

[Help](#)

[Sign Out](#)

[Password](#)

Select from the following options:

- [1\) Add New Contractor](#)
- [2\) View/Update Contractor Details](#)
- [3\) Add New/ Update Objective Details](#)
- [4\) View Data Entered by Contractors](#)
- [5\) View Reports](#)



# A Data Entry Screen

New York State Healthy Heart

## Program Monitor Data Entry System (PMDES)

[Contractors](#) >>> [Options](#) >>> [Tasks](#) >>> [Objectives](#) >>> [Evaluation](#) >>> [View](#)

Welcome, Elaine Troy

**BUILDING HEALTHY COMMUNITIES**

[Help](#)

[Sign Out](#)

Evaluation ID: 1136      Objective ID: 148

Objective: 8) Env/Pol Outcome: By 3/31/2008, inc. availabiltiy of fresh produce by 25000 pounds in

Date last changed: 11/30/2006

What is being measured?: Pounds of Produce collected by the Squash Hunger Program

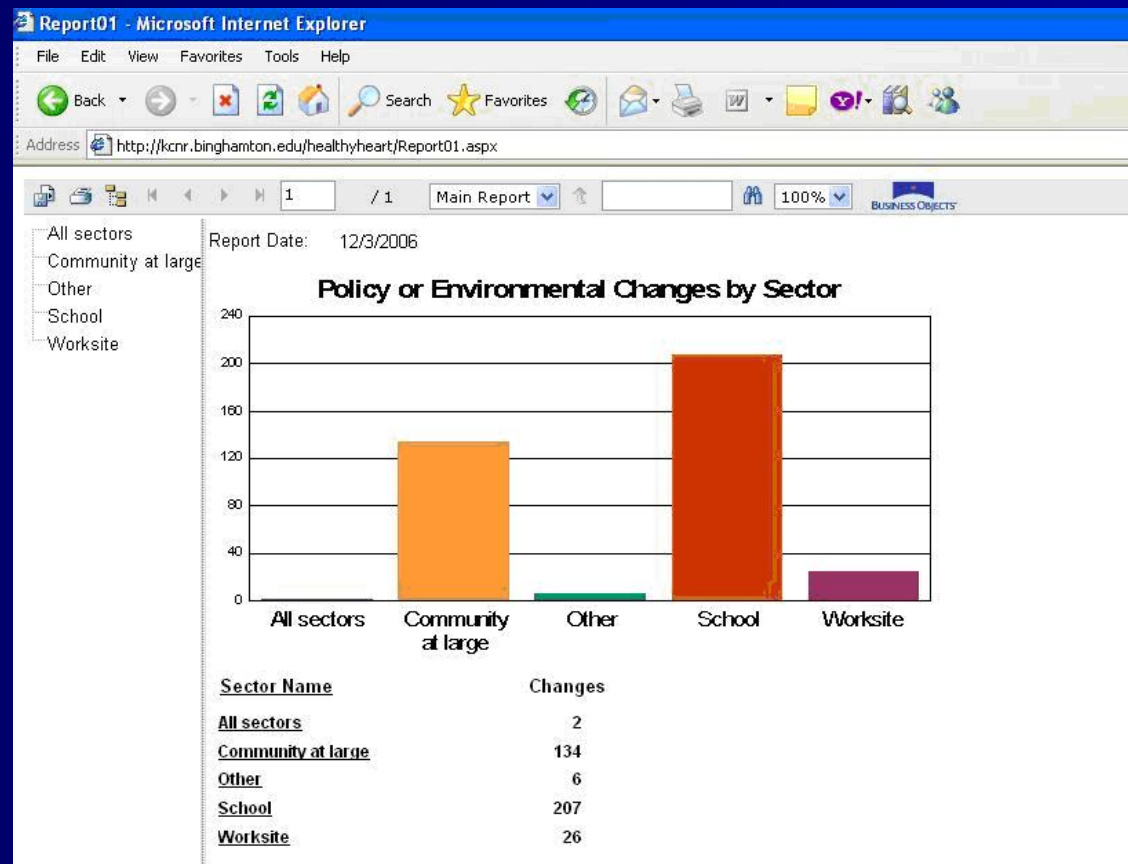
Worksite or community Location: Capital Region

Are you working on any school-based policy or environmental changes?  Yes  No

Click this button if you would like to update any information on school policy /environmental change list (Only click this button if you are working on a school-based policy or environmental change)

**Update School List**

# An Example of a Report





# Conclusions

- The applications we developed enable users across New York State to collect and report standardized data, retrieve information, and generate a variety of reports.
- Program managers in the state capital Albany can monitor individual projects' progress on a regular basis and generate statewide or project specific reports.
- This initiative has already proven to be user friendly, cost effective, fast, and accurate and met the key requirements of program and project managers with minimum technical assistance.
- Regardless of the location of individual projects, with internet access PMDES is designed to handle many more clients and potentially go national.



# Lessons Learned

- No system is able to meet all data collection, program monitoring and evaluation requirements for complex community health programs.
- It is not easy to find employees who have the technical expertise to develop a quality system.
- The System should be flexible enough to accommodate modifications and additions after the initial development.
- Written agreements with funders specifying each field, web form, and reports are highly recommended.
- It is a mistake to assume that anybody can operate a computer and access the internet. We realized during our training sessions that a number of our clients required additional technical support.



# Acknowledgements and Correspondence Information

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